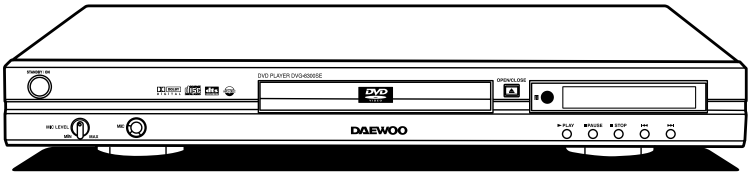


SERVICE MANUAL

DVG-8300SE
DVG-5200S

DAEWOO
ELECTRONICS CORP.

CATALOG

4.IC MATERIAL 4-1

IMPORTANT SAFETY PRECAUTIONS

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and servicing instructions in the literature accompanying the appliance.

WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION : TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

IMPORTANT FOR LASER PRODUCTS

- **LASER** : This Digital Video Disc Player employs a Laser System. To ensure proper use of this product please read this owner's manual carefully and retain for future reference. Should the unit require maintenance, contact an authorized service location - see service procedure.

  Use of control adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.

  To prevent direct exposure to the laser beam, do not try to open the enclosure. Visible laser radiation when open and interlocks defeated.
  DO NOT STARE INTO THE BEAM.
- **DANGER** : Visible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
- **CAUTION** : Do not open the top cover. There are no user serviceable parts inside the Unit; leave all servicing to qualified service personnel.

CLASS 1
LASER PRODUCT

CAUTION: Any changes or modification in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

ATTENTION: KEEPING THE STATUS OF STOP IS MORE THAN AN HOUR, THIS SET ENTERS SCREEN SAVE MODE FOR 5 MINUTES AND THEN THE POWER IS SWITCHED OFF.

MACROVISION

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

This set has been designed and manufactured to assure personal safety. Improper use can result in electric shock or fire hazard. The safeguards incorporated in this unit will protect you if you observe the following procedures for installation, use and servicing. This unit is fully transistorized and does not contain any parts that can be repaired by the user.

1 READ INSTRUCTIONS

All the safety and operating instructions should be read before the unit is operated.

2 RETAIN INSTRUCTIONS

The safety and operating instructions should be retained for future reference.

3 HEED WARNINGS

All warnings on the unit and in the operating instructions should be adhered to.

4 FOLLOW INSTRUCTIONS

All operating and use instructions should be followed.

5 CLEANING

Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6 ATTACHMENTS

Do not use attachments unless recommended by the unit's manufacturer as they may cause hazards.

7 WATER AND MOISTURE

Do not use this unit near water- for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool.

PORTABLE CART WARNING
(symbol provided by RETAC)



8 ACCESSORIES

Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury to a child or adult as well as serious damage to the unit. Use this unit only with a cart, stand , tripod, bracket, or table recommended by the manufacturer.

8A

A unit and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the video product and cart combination to overturn.

9 VENTILATION

Slots and openings in the case are provided for ventilation to ensure reliable operation of the unit and to protect it from overheating. These openings must not be blocked or covered. These openings must not be blocked by placing the unit on a bed, sofa, rug, or other similar surface. This unit should never be placed near or over a radiator or heat radiator. This unit should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

10 POWER SOURCES

This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult

your video dealer or local power company. For units intended to operate from battery power, or other sources, refer to the operating instructions.

11 GROUNDING OR POLARIZATION

This unit is equipped with a polarized alternating -current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way.

This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your obsolete outlet.To prevent electric shock, do not use this polarized plug with an extension cord, receptacle, or other outlet unless the blades can be fully inserted without blade exposure. If you need an extension cord, use a polarized cord.

12 POWER-CORD PROTECTION

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.

13 LIGHTNING

For added protection for this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and power line surges.

14 DISC TRAY

Keep your fingers well clear of the disc as it is closing. It may cause serious personal injury.

15 OVERLOADING

Do not overload wall outlets of extension cords as this can result in a risk of fire or electric shock.

16 OBJECT AND LIQUID ENTRY

Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or “short-out” parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.

17 BURDEN

Do not place a heavy object on or step on the product. The object may fall, causing serious personal injury and serious damage to the product.

18 DISC

Do not use a cracked, deformed or repaired disc. These discs are easily broken and may cause serious personal injury and product malfunction.

19 SERVICING

Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

20 DAMAGE REQUIRING SERVICE

Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions.

A. When the power-supply cord or plug is damaged.

B. If liquid has been spilled, or objects have fallen into the unit.

C. If the unit has been exposed to rain or water.

D. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.

E. If the product has been dropped or the cabinet has been damaged.

F. When the unit exhibits a distinct change in performance-this indicates a need for service.

21 REPLACEMENT PARTS

When replacement parts are required, have the service technician verify that the replacements he uses have the same safety characteristics as the original parts. Use of replacements specified by the unit manufacturer can prevent fire, electric shock, or other hazards.

22 SAFETY CHECK

Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks recommended by the manufacturer to determine that the unit is in safe operating condition.

23 WALL OR CEILING MOUNTING

The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

24 HEAT

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

FCC NOTICE :

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rule. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception; which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorientate or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experience radio/TV technical for help.

FEATURES

- **OUTSTANDING SOUND QUALITY**
  Dolby Digital system developed by Dolby Laboratories and DTS developed by DTS Inc., features high quality surround sound, can be played in DVD or CD disc at home, to reproduce high quality sound effects.
- **HIGH DEFINITION**
  The unit adopts MPEG2 coding format and brings the high horizontal resolution.
- **UNIQUE FUNCTIONS**
  Multi-angle and multi-language bring unique trick functions.
  Parent lock makes it easy to control the content of discs.
- **SCREEN**
  Ordinary screen and wide screen (16:9) are available.
- **COMPATIBILITY**
  The unit can play DVD discs, and is compatible with CD, CD-R, CD-RW, PIC-CD and MP3 discs.
- **ZOOM**
  It can enlarge pictures or reduce pictures.
- **MULTI-FUNCTIONS**
  Fast forward, fast reverse, forward and reverse slow, frame play , repeat play and program play.
- **TIME SEARCH**
  It can search a specific part on a disc, especially good for watching fiction movies.
- **RESUME PLAY**
  It can memorize the position where the disc is stopped and resume playback.
- **VIDEO OUTPUT**
  Standard video, S-video signal output mode, component video output mode.
- **AUDIO OUTPUT**
  Analog audio output, coaxial and optical digital audio output, can be connected with the appropriate amplifier to enjoy high-quality sound effects.
- **KARAOKE**
  Microphone input, KARAOKE channel selection.

ABOUT MANUAL

PRINCIPLES FOR WRITING

This manual mainly introduces how to use buttons on the remote control.
You may operate the unit if the buttons on the unit have the same or similar names as or to those on the remote control.

PLAYABLE DISCS

• DVD and Audio CD

Disc type	Playable	Restriction
DVD	Possible	Region number 4 or Region number All
CD	Possible	PCM or dts
CD-G	Possible	Only Audio playback
CD-ROM	Possible	MP3 File
CD-R	Possible	CD/CD-ROM (MP3 File)
CD-RW	Possible	CD/CD-ROM (MP3 File)
DVD-R	Possible	DVD Video
DVD-ROM	Impossible	DVD Video
DVD-RAM	Impossible	
DVD+RW	Possible	DVD Video
DVD-RW	Possible	DVD Video
Photo CD	Impossible	

TERMS FOR DISCS

TITLE

The images or music of a DVD are divided into some units, among which title is the biggest one.
When playing a DVD, the movie is the title.
When playing a CD, the combined tracks make up the title.

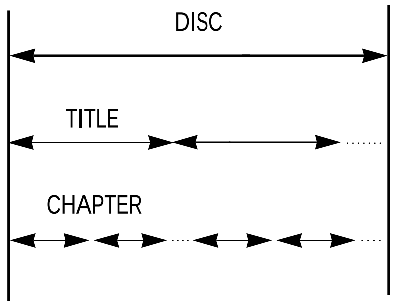
CHAPTER

It is smaller than title among the units of a DVD. A title is made up of several chapters , and each chapter has a number for search. But some discs may not have numbered chapters.

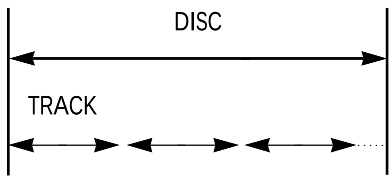
TRACK

In a CD, each track has a number to enable search functions.

STRUCTURE OF DVD



STRUCTURE OF CD



SCENE

The menu pictures, motion and motionless pictures of a CD or something discs with PBC function can be divided into some parts, these parts are scenes. Each scene has a number for search.

PBC (PLAYBACK CONTROL)

It is signals recorded in a CD or something discs to control playback.

DISC TYPE	FUNCTION
disc without PBC	enjoy music and images (motion pictures)
disc with PBC	Besides the images of special disc, play interactive software with the menu pictures shown on the TV screen (PBC play). If the disc has motionless pictures, high-resolution playback is also available.

REGION MANAGEMENT INFORMATION

This unit is designed and manufactured to respond to the Region Management information that is recorded on a DVD disc. The region number of this player is “4”. If the region number described on the DVD discs does not correspond to the Region number of this player, the player will not play this disc. This player will play DVD discs made for “ALL” regions. Therefore, this player will play DVD discs marked with labels containing the region number “4” or “ALL”.



(Region 4)



(Region ALL)

BEFORE OPERATION

SECURITY

- Before operation, check if the voltage of the unit is in line with the local voltage.
- Hold the plug to disconnect it from the mains outlet. Do not pull the power cord.
- When the plug of the unit is connected to the mains outlet , the unit will be still connected to AC even if the power is turned off.
- Disconnect the plug as soon as liquid or objects enter the unit. The unit can not be used until being checked by experts.
- Do not open the cabinet as laser rays employed by the unit may damage eyes. Any servicing should be done by qualified service personnel.

PLACEMENT

- Put the unit where ventilation is good enough to prevent overheating.
- Never put the unit in direct sunlight or near heat sources.
- Put the unit horizontally, never put any heavy object on the unit.
- To protect the pickup, do not put the unit where there is dust. If there is dust on the pickup, use a cleaning disc to clean it. Paying particular attention to the operating instructions of the cleaning disc.

CONDENSATION

Moisture will appear on the pickup lens in the following cases:

- The unit is suddenly moved from a cold place to a warm place.
- The unit is put in a room with a heater, or in cold air from an air-conditioner.
- Using the unit in a humid place. In these cases, the unit can not work. Unload the disc and leave the unit on for about one hour to evaporate the moisture.

CLEANING

- Use a soft cloth with a little neutral detergent to wipe the cabinet, panel and controls.
  Never use abrasive paper, polishing powder, solvent like alcohol or gasoline.

HANDLING DISC

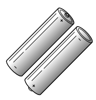
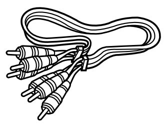
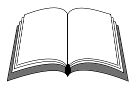
- To keep the disc clean, do not touch the playsides of the disc.
- Do not attach paper or tape to the disc.
- Keep the disc away from direct sunlight or heat sources.
- Store the disc in a disc case after playback.

CLEANING DISC

- Before playback, wipe the disc outwards from the centre with clean cloth.
- Do not use any type of solvent such as thinner, benzine, commercially available cleaners or antistatic spray.

CHECK ACCESSORIES

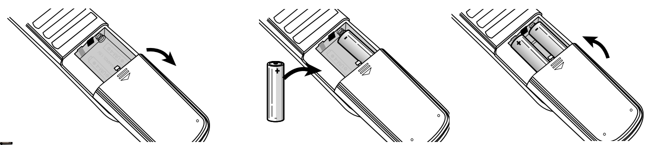
Check if you have all the accessories after the carton is opened.

Remote control	AAA batteries	Video/Audio cord	Owner's manual
			

USE REMOTE CONTROL

Check if you have all the accessories after the carton is opened.

1. Open the battery compartment.
2. Insert two AAA batteries, make sure to match "+" and "-" of the batteries to the marks in the battery compartment.
3. Close the battery compartment.
4. Point the remote control at the remote sensor.

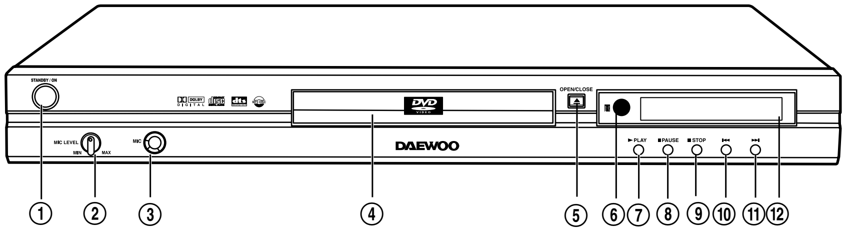


Note:

1. Batteries can last for about 6 months generally. Change the batteries of that does not work.
2. If the remote control is not used for a long time, remove the batteries to prevent battery leakage.

PREPARATIONS BEFORE OPERATION

FRONT PANEL



① STANDBY/ON button
To switch the unit On or Off when connected to AC power outlet

② Microphone Level adjustment knob.

③ Microphone Jack

④ TRAY DOOR
Press OPEN/CLOSE button to open it.

⑤ OPEN/CLOSE button
To open or close the disc tray.

⑥ Remote Sensor

⑦ PLAY button
To play the loaded disc. Press this button to go to the preferred item when the menu is displayed on the TV screen.

⑧ PAUSE
Press this button in playback mode, the picture stops. This machine enters the playback pause mode.

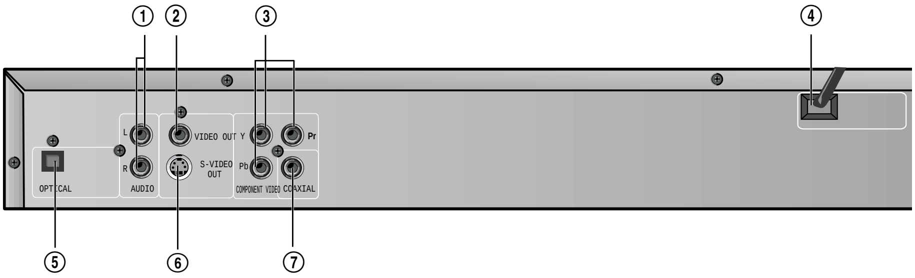
⑨ STOP

⑩ One Chapter/Track backward button
To skip back from the status.

⑪ One Chapter/Track forward button
To skip forward to the status. If playing a disc with PBC, this button works as the NEXT button to move to the next play list.

⑫ DISPLAY
Displays operation status

REAR PANEL



① AUDIO OUT (L/R TRACK)
Two phono sockets for analogue 2 Channel audio in order to a TV or stereo amplifier.

② VIDEO OUT
Connects composite video signal to input AV or PHONO sockets of TV or monitor to achieve high fidelity colour reproduction.

③ COMPONENT(Y.Pb.Pr)
Connects to TV or monitor equipped with Component input . In order to achieve a sharper and cleaner picture than that when connected via VIDEO OUT (composite video).

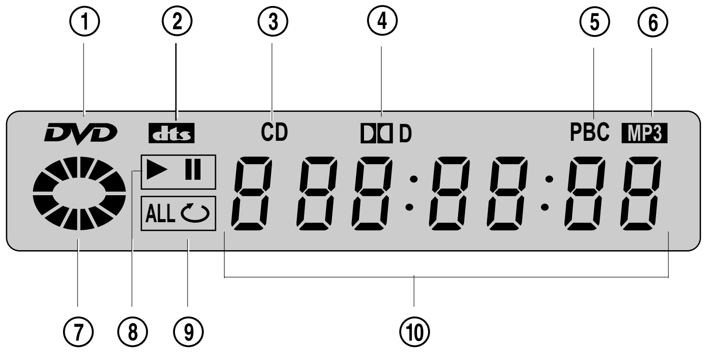
④ POWER SUPPLY SOCKET WIRE
Creates POWER between wall outlet and the unit.

⑤ DIGITAL AUDIO OPTICAL OUT
Connects digital audio under play mode into an AV amplifier or a receiver equipped with digital audio decoder for you to enjoy the theater-quality sound in your home.

⑥ S-VIDEO OUTPUT
Connects to TV or monitor equipped with S-VIDEO input. In order to achieve a sharper and cleaner picture than that when connected via VIDEO OUT (composite video).

⑦ DIGITAL AUDIO COAXIAL OUT
Connects digital audio under play mode into an AV amplifier or a receiver equipped with digital audio decoder for you to enjoy the theater-quality sound in your home.

VFD



① **Recognized DISC TYPE indicator**
Illuminates the current operation mode.

② **DVD AUDIO STREAM indicator**
Indicates the audio type of the disc under play is DTS

③ **Recognized DISC TYPE indicator**
CD.

④ **DVD AUDIO STREAM indicator**
Indicates the audio type of the disc under play is DOLBY DIGITAL.

⑤ **PBC indicator**
This indicator is lit up in selecting PBC ON while this indicator disappears in selecting PBC OFF.

⑥ **Recognized DISC TYPE indicator**
Illuminates when MP3 disc is played.

⑦ **DISC LOAD/PLAY indicator**
This indicator is lit up after recognizing disc.

⑧ **PLAY/ PAUSE indicator**

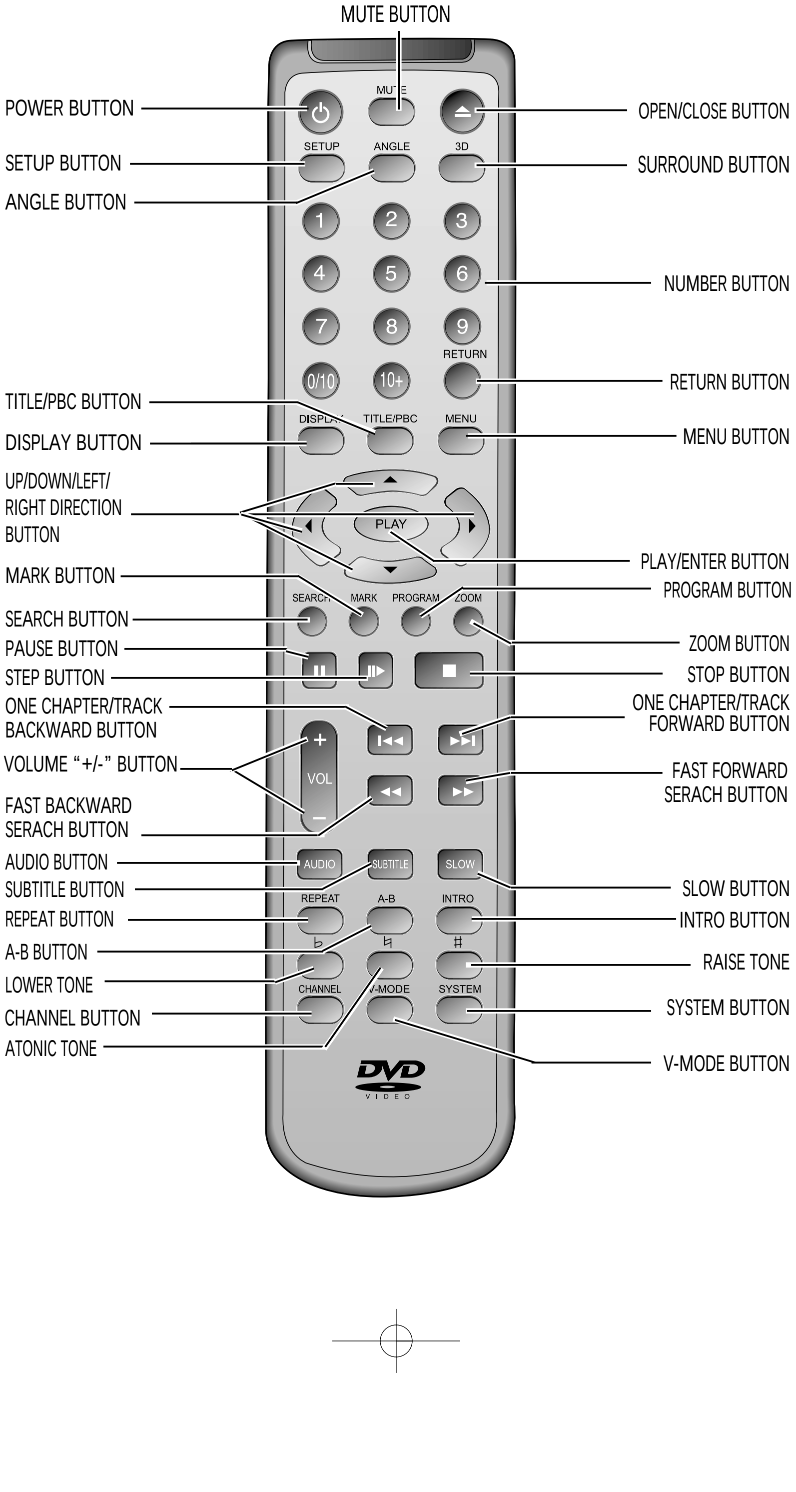
⑨ **REPEAT MODE indicator**
⟲ : In case you want to repeat and play a chapter or track.
ALL ⟲ : In case you want to repeat and play a title or disc.

⑩ NUMBER/ CHARACTER indicator
Title, chapter number, and time are displayed in loading DVD disc while track number and time are displayed in loading CD/CDMA/MP3/something disc.

OPEn	Tray is opened
CLOSE	Tray is closed
LOAd	Disc is loaded
nO dISC	There is no disc in tray
Error	Disc has some error

NAMES AND LAYOUT OF REMOTE CONTROLS

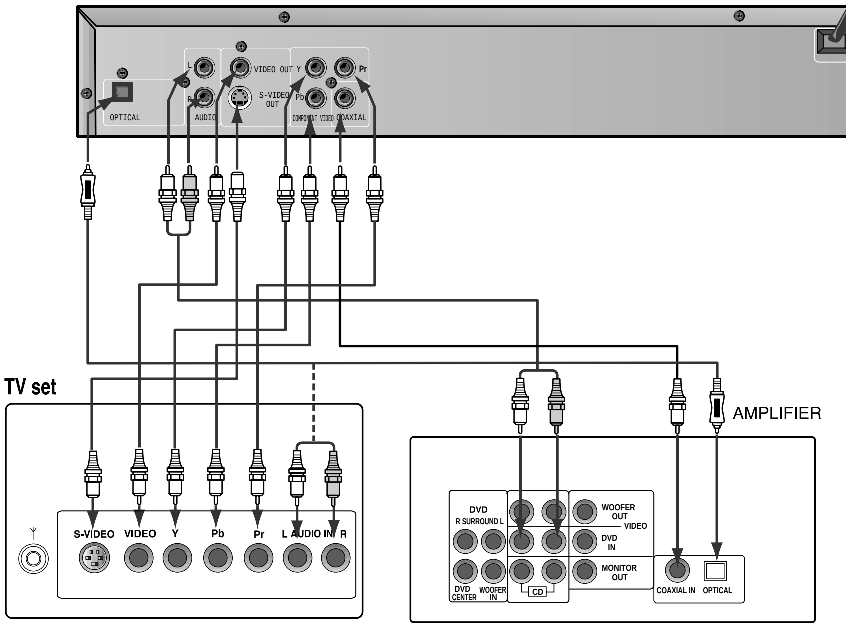
* In case of setting the mode by using SETUP menu (for example, AUDIO select in PREFERENCE SETUP), the setting is kept though you switch the unit off and turn it on.



CONNECTIONS

Turn off all equipment before operation.
The unit has many kinds of output modes like A/V output, S-VIDEO output and digital signal output (COAXIAL, OPTICAL). You may select as you need.

CONNECTED TO A TV AND AN ORDINARY AMPLIFIER



Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories. Confidential Unpublished works.

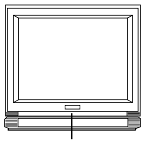
"DTS" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.

BASIC OPERATIONS

PLAY DISCS

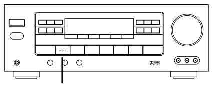
1 Push "POWER" button on the TV and audio system, Push "TV/VIDEO" button on the TV, select VIDEO mode (TV).

Select S-Video mode if using an S-VIDEO connection.



Note:
The Step2 can be cancelled if you do not connect it to the amplifier.

2 Select the right audio input on the amplifier.
- Each amplifier is different from another, please refer to the manual of the amplifier.
(e.g., connect the audio output of the DVD player to the DVD audio input of an amplifier.)



3 Push "STAND BY/ON" button on the front panel or " ⏻ " button on the remote control to turn the unit on.

4 Push "OPEN/CLOSE ⏏" button to open the disc tray and insert the disc with its label look upward. Push "OPEN/CLOSE ⏏" button again to close the disc tray. The unit begins to read the disc. The TV screen shows the DVD menu and title menu.

- In the case of DVD, DVD menus and titles are displayed on TV screen.
- In the case of something disc, the menus are displayed on TV screen and it is converted into PBC (Play Back Control) mode.
- In the case of CD, the disc plays in order of its track number.

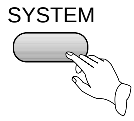
5 Stop playback.
Press ■.

6 Press ⏏ to remove the disc.

SYSTEM SETTING

According to the system of the TV to be connected, set the system of the unit to make it match the TV.

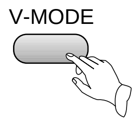
Push SYSTEM button on the remote control, then choose TV TYPE.



- If the system of the TV is PAL, push "SYSTEM" once.
- If the TV is multi-system, push "SYSTEM" twice.
- If the system of the TV is NTSC, push "SYSTEM" three times.

■ If the TV has component input, please connect the unit and the TV with component cord (not supplied).

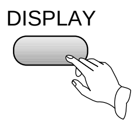
V-MODE



- In case of connecting the component, press the V-MODE on the remote control to select YUV (Y, Pb, Pr).
- When you connect the Composite or S-VIDEO and picture is not displayed, press the V-MODE on the remote control to check if DVD player position in the video mode.

DISPLAY

Each time you press “DISPLAY” button when playing a disc, the TV screen shows the information as :



■ DVD

- TITLE ELAPSED -> TITLE REMAIN -> CHAPTER ELAPSED -> CHAPTER REMAIN -> (NOTHING DISPLAY)

TITLE ** / ** CHAPTER ** / ** **: ** : **

■ CD

- SINGLE ELAPSED -> SINGLE REMAIN -> TOTAL ELAPSED -> TOTAL REMAIN

■ MP3

- SINGLE ELAPSED -> SINGLE REMAIN -> DISPLAY OFF

■ Something disc

- SINGLE ELAPSED -> SINGLE REMAIN -> (NOTHING DISPLAY)

TRACK ** / ** **: ** : **

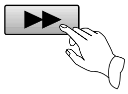
FAST PLAY

When playing disc, you may play it forward fast or reverse it fast to find what you need.

Note:
Push PLAY to play normally when playing fast.

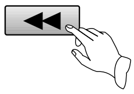
Note:
The marked FAST PLAY speed on owner's manual and real fast play speed can be different depending on which disc you play.

1 Push ▶▶ to play forward fast. Each time you push the button, the speed of picture changes like the right sides.



1. ▶▶ X2
2. ▶▶ X4
3. ▶▶ X8
4. ▶▶ X16
5. ▶▶ X32 (DVD only)
6. PLAY

2 Push ◀◀ to reverse the disc fast. Each time you push the button, the speed of picture changes like the right sides.



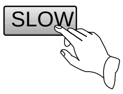
1. ◀◀ X2
2. ◀◀ X4
3. ◀◀ X8
4. ◀◀ X16
5. ◀◀ X32 (DVD only)
6. PLAY

SLOW PLAY

Enjoy slow motions by the following steps.

Push "SLOW" button to play slowly.

Note:
Push PLAY to play normally .



• something disc

→ I▶ X1/2 → I▶ X1/4 → I▶ X1/8 → I▶ X1/16 → PLAY

• DVD

→ I▶ x1/2 → I▶ x1/4 → I▶ x1/8 → I▶ x1/16 → ◀I x1/2 → ◀I x1/4 → ◀I x1/8 → ◀I x1/16 → PLAY

STEP/ PAUSE

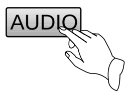
Note:
Push PLAY to play normally .

Push PAUSE II or STEP II▶ on the remote control to make the playback pause.
Pushing STEP II▶ again moves the picture forward frame by frame.

SELECT AUDIO LANGUAGE

You can choose the language according to your choice when playing mulit-language DVD.

Press “AUDIO” button, select different languages.



Note:

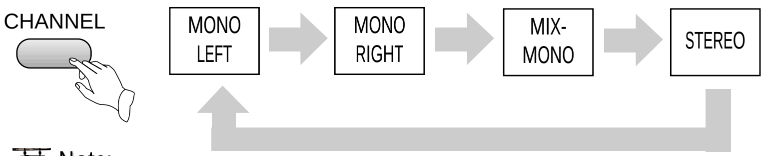
1. Different disc has different languages
2. You can push "AUDIO" button to choose the language you want when you play multi-language DVD discs.

**Attention:*
Please select the AUDIO language in SETUP menu to keep the setting!!!

SELECT CHANNELS

You may select the right channel or left channel or stereo from a multi-channel.

Push "CHANNEL" button, the screen show alternately and select the desired audio channel:



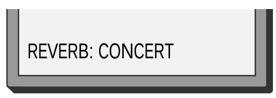
Note:

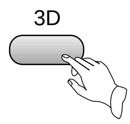
You can use channel function when you play the disc, you can choose mono audio output (left or right channel), stereo or mix-mono

SELECTING 3D AUDIO

This function outputs 3D effects on the stereo audio analog output where 3D effects are broken down into 6 surround modes.

1 **Press [3D] button.**
Every time the user presses [3D] button, CONCERT, LIVING ROOM, HALL, BATHROOM, CAVE, ARENA and CHURCH appear one by one.





2 **Select the desired 3D sound mode.**

PLAYING A DESIRED SCENE

TO SKIP SCENES IN A DISC

1 **Push ▶▶| to move to next chapter (or track).**
The current chapter (or track) moves to the next chapter (or track).

2 **Push |◀◀ to move to previous chapter (or track).**
The current chapter (or track) moves to the previous chapter (or track) or first scene of current chapter (or track).

DIRECTLY MOVING TO A DESIRED TITLE (DVD)

Some movie discs may contain multiple titles. If the disc has a movie title menu recorded on it, the [TITLE/PBC] button can be used to select the movie title. Details of operation may differ depending on the disc used.

1 **Push the [TITLE/PBC] or [MENU] button.**
A list of the titles on the disc is displayed.

For the case of something disc, menu screen will appear only when the disc has PBC function and PBC ON is activated.



Note:
You can select the desired title directly by using number button.

* In case of PBC play, press RETURN to return to the sub-menu, press it again to return to the home menu.

2 **Push the [PLAY] button after pressing the [< > ∧ ∨] button to select the desired title.**

The selected title now starts playing.

PLAYING A DISC CONTAINING MP3 FILES

1. When a MP3 disc is loaded, MP3 menu screen is displayed automatically depending on MP3 disc's folder structure.

2. Use the direction button to select the folder you want to play, by pressing [PLAY] button. This button allows you to see the file lists under the folder.

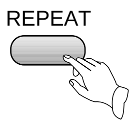
3. Use the direction button and select a MP3 title using the PLAY button then play will start automatically. When you know the title number, enter the MP3 title number using the numeric buttons on the remote control and then press [PLAY] button.

4. Press ▶▶I on the remote control to choose next title.
   Press I◀◀ for previous title. When you know the title number, enter MP3 title number using the numeric buttons on the remote control and then press [PLAY] button.

REPEAT PLAY

When play DVD disc, this function can be used to repeatedly play a title, chapter or disc.

Push "REPEAT" button, the screen shows orderly.



Note:
Push REPEAT to cancel the repeat function.

• DVD

CHAPTER → TITLE → ALL → (NOTHING DISPLAY)

• CD/ something disc

TRACK → ALL → (NOTHING DISPLAY)

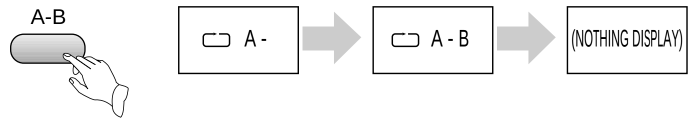
• MP3

SINGLE → REPEAT ONE → RPT. FOLDER → SHUFFLE → FOLDER

REPEATING A DEFINED PERIOD FROM A TO B

You may press A-B to enjoy some parts repeatedly when playing a disc.

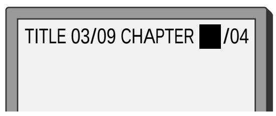
1. Press “A-B” to set a starting point A.
2. Press “A-B” twice to an end point B.
   Afterwards, the unit plays from A to B.
3. Press “A-B” three times to remove A-B repeat.



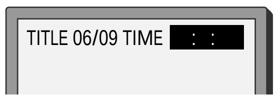
SEARCHING DVD WITH A TITLE/CHAPTER NUMBER OR A TIME

You may directly enter a time, title or chapter number to search fast on a disc.
The unit plays from the point.

1 **If you want to search with a chapter and a title number, press [SEARCH] button one time.**
It shows total title numbers and chapter numbers. Please enter the new chapter and title number to be searched using the [NUMBER] buttons.



2 **If you want to search with a time in a title, press [SEARCH] button twice.**
Please enter the new time to be searched using the [NUMBER] buttons.



3 **If you want to search with a time in a chapter, press [SEARCH] button three times.**
Please enter the new time to be searched using the [NUMBER] buttons.



4 **In completing entering, please press [PLAY] button.**
PLAY starts from the selected position.

SEARCHING CD AND SOMETHING DISC WITH A TIME OR TRACK TIME

You may directly enter a disc or track time to search fast on a disc. The unit plays from the point.

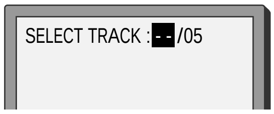
1 **If you want to search with a disc time, press [SEARCH] button one time.**
Please enter the new time to be searched using the [NUMBER] buttons.



2 **If you want to search with a track time of CD, press [SEARCH] button twice.**
Please enter the new time to be searched using the [NUMBER] buttons.



3 **If you want to search with a track number, press [SEARCH] button until the picture is displayed in the right side.**
It shows total track numbers. Please enter the new track number to be searched using the [NUMBER] buttons.

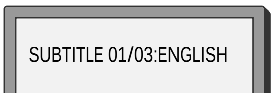


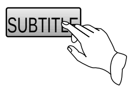
SELECT A SUBTITLE LANGUAGE

When play a multi-subtitle DVD, you may select one subtitle to show it on the screen.

Note:
1. For some discs, subtitles cannot be removed.
2. Subtitle function is only available for some discs with subtitle recorders.

1 **Keep pressing [SUBTITLE] button till the user's preferred language appears.**
If a DVD disc includes subtitle information, every time the user presses [SUBTITLE] button, ENGLISH, FRENCH, SPANISH and others appear one by one.





2 Remove the subtitle.

Press SUBTITLE until the screen shows "SUBTITLE OFF".

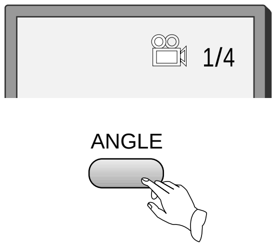
PLAY DISCS IN VERIOUS WAYS

SELECT ANGLE

Note:
Multi Angle function is limited to a DVD disc supporting multi angle information.

Some discs have images with different screen angles, you may select among them. For example, when you watch a running train, you may select to watch it from the front, the left window or the right window without stopping it.

Keep pressing [ANGLE] button till the preferred angle appears.

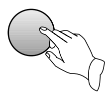


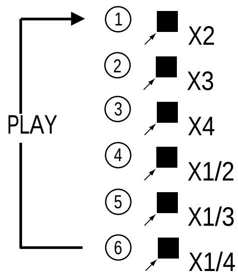
- 2/4 (select ANGLE2)
- 3/4 (select ANGLE3)
- 4/4 (select ANGLE4)

ZOOM PLAY

This function can be used to enjoy a motion or motionless picture.

1 Push "ZOOM" button when playing, the screen shows orderly:





2 Push "UP/DOWN/LEFT/RIGHT [< > ^ v] button to move the enlarged picture.

BOOK MARK

Note:
If you erase a book mark function, push "RETURN" button.

1 Push MARK button , the screen will show the following frame:

2 Moving direction button to select the saving position on the screen. Push PLAY button to save the time tag.

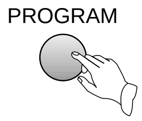
3 Push MARK button when you need book mark function, then choose the item you want to resume playing, then push PLAY button to continue playing from the saving point.

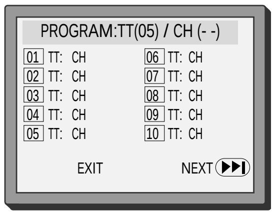
	02			05	
	08				

PROGRAM PLAY (DVD)

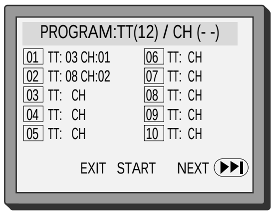
You may program the title and chapter on a disc and play them in the programmed order.

1. Push "PROGRAM" button, the screen shows:





2. Input the sequence number you want to program playing.



3. After the programming is finished, push direction button to select "START", Push "PLAY" button to start playing.

4. Push "PROGRAM" button to remove program play in stop status.

   * If you erase a program, put the cursor in the position of the program, push “RETURN” button.

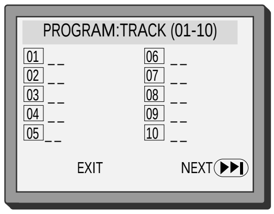
Note:

First one is title, second one is chapter.

PROGRAM PLAY (CD)

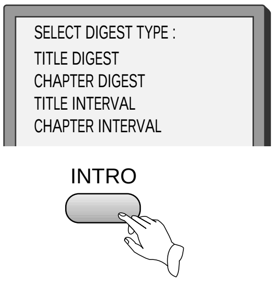
You may program the track on a disc and play them in the programmed order. (For MP3 play, refer to the page 28)

1. Push "PROGRAM" button, the screen shows:



2. Push direction button, input the sequence number you want to program playing.
   After the programming is finished, push direction button to select "START", Push "PLAY" button to start playing.

DIGEST PLAY (DVD)

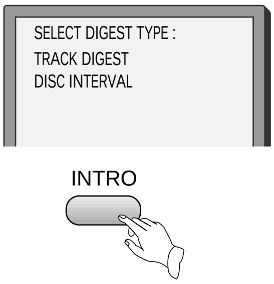


1. Push "INTRO" button when the unit is playing disc, the screen shows :
2. Push direction button to select the digest type.

Note:

- **TITLE DIGEST**
  The player will play 5 seconds each title. After moving the cursor in the position “--”, push NUMBER button to select the title and push PLAY button. Then the player will begin to play from the title you selected. Or put the cursor in the position of desired picture and push PLAY button.
- **CHAPTER DIGEST**
  The player will display the beginning picture of each chapter in current selected title.
- **TITLE INTERVAL**
  Scan the story in the disc from 00: 00 :00 on, the unit will play the disc every other 10 minutes.
- **CHAPTER INTERVAL**
  Scan the story in the current title from 00: 00 :00 on, the unit will play the disc every other 10 minutes.

DIGEST PLAY (something disc)

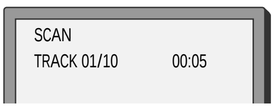


1. Push "INTRO" button when the unit is playing disc, the screen shows :
2. Push direction button to select the digest type.

Note:

- ***TRACK DIGEST***
  The player will play 5 seconds each track. Push NUMBER button to select the track, then push PLAY button, the player will begin to play from the track you selected.
- ***DISC INTERVAL***
  Scan the story in the disc from 00: 00 :00 on, the unit will play the disc every other 10 minutes.

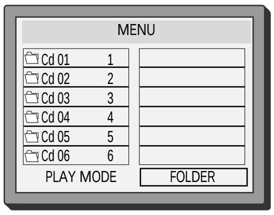
DIGEST PLAY (CD)

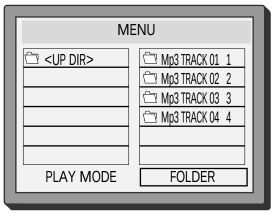


1. Push "INTRO" button when the unit is playing disc, the screen shows :
2. The player will play 5 seconds each track.

PLAY MP3 OR PIC-CD DISC

USE NUMBER BUTTONS TO SELECT TRACKS (MP3 OR PIC-CD)





1 The screen will display as right after the disc is loaded

2 Each time you press PROGRAM button, NORMAL MODE, PROGRAM LIST and FILE LIST appear one by one.
At this time you can operate the Program play of the item in the program list.

3 You can scan all the directors on the disc by using direction button. You can play the directory you selected by the number button. The screen will display as below if the selected directory has songs which can be played.

Note:
If the number of directory or songs is over 6, you can use four directions button to select the item you prefer. You also can use "NEXT" button or "PREVIOUS" button to change the page number.

4 In the above status, you can use "LEFT" button or "DOWN" button to select the playing area, then push "UP" button or "DOWN" button to select the item you want to play.

SELECT PLAYING MODE (MP3 OR PIC-CD)

1 Push direction button to select the play mode area under stop status, then push direction button to select different play mode. These play modes list as the following :

- Single mode: the player will stop after finished playing the current item
- Repeat one mode: repeat the current item
- Repeat folder mode: repeat the items in the current directory
- Shuffle mode: play items by random
- Folder mode: the player will stop after finished playing the whole directory

2 When playing, push "REPEAT" button, you can select "SINGLE", "REPEAT ONE", "REPEAT FOLDER" and "FOLDER".

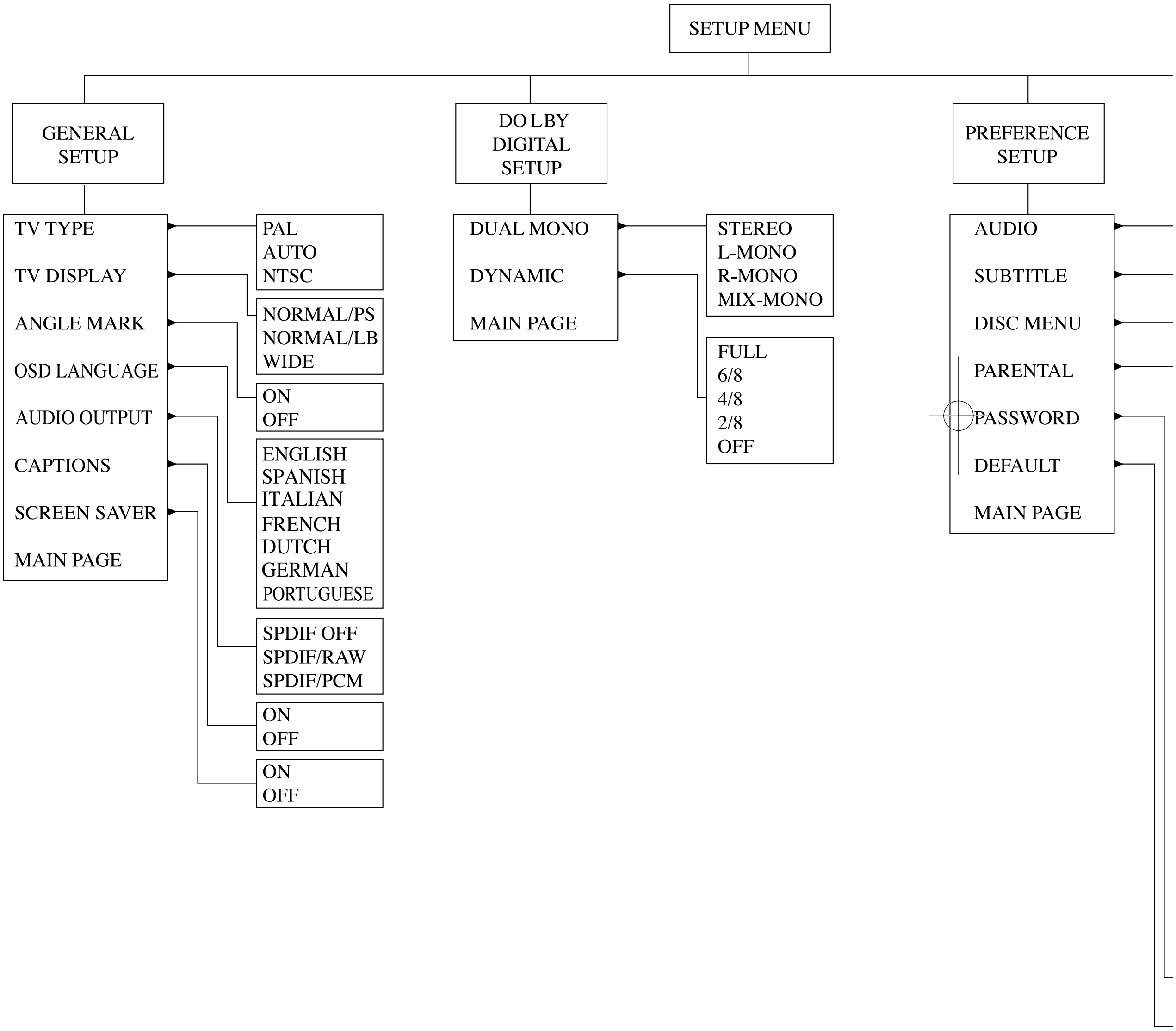
PLAY PIC-CD BY ZOOM OR ROTATING OPERATING (PIC-CD)

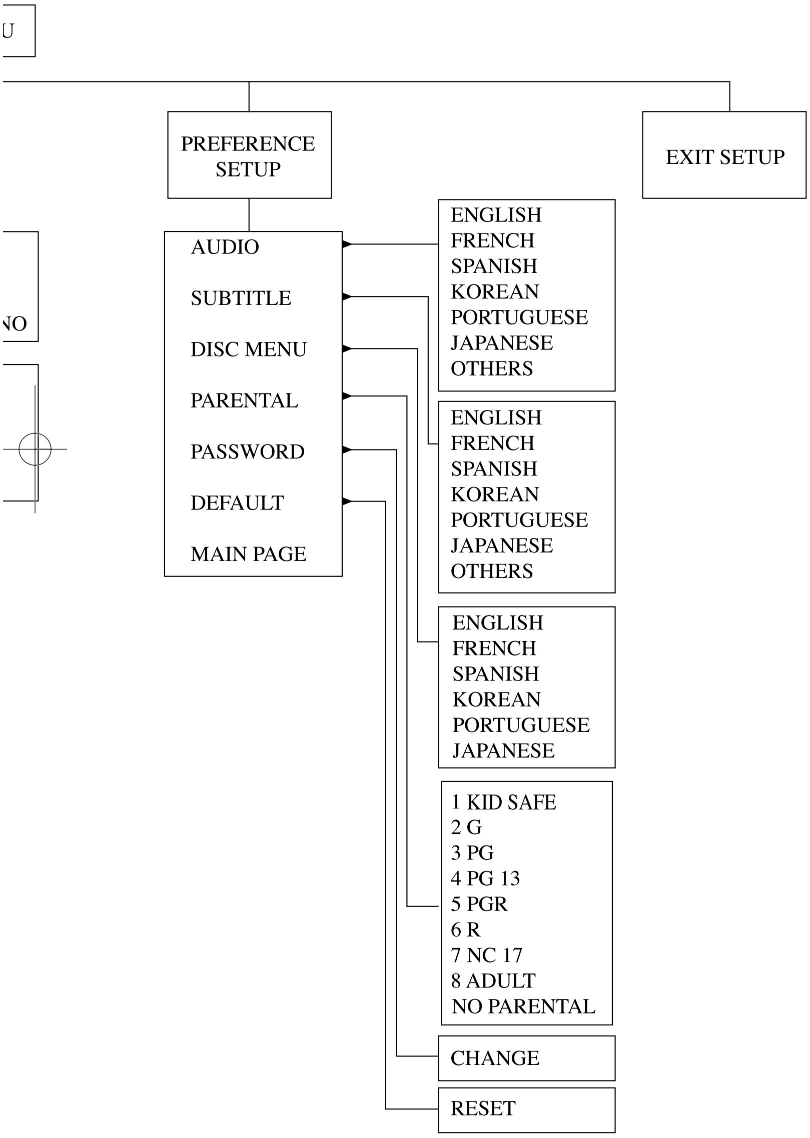
The screen will show "ZOOM 100% " when you push ZOOM button under playing status, the current picture can be zoomed by push ►► or ◄◄ button, and the screen will also show the zoom ratio of the picture (ZOOM 100%, ZOOM 125%, ZOOM 150%, ZOOM 200%, ZOOM 75%, ZOOM 50%). The picture will restore to the normal status if you push PLAY button under the ZOOM status.

FUNCTION SETTING

MENU SETTING

According to the recorded information and external equipment, set the following functions for DVD to obtain the best playing status. Push "SETUP" button to set the main menu.




PREFERENCE SETUP
EXIT SETUP
AUDIO
SUBTITLE
DISC MENU
PARENTAL
PASSWORD
DEFAULT
MAIN PAGE
ENGLISH
FRENCH
SPANISH
KOREAN
PORTUGUESE
JAPANESE
OTHERS
ENGLISH
FRENCH
SPANISH
KOREAN
PORTUGUESE
JAPANESE
OTHERS
ENGLISH
FRENCH
SPANISH
KOREAN
PORTUGUESE
JAPANESE
1 KID SAFE
2 G
3 PG
4 PG 13
5 PGR
6 R
7 NC 17
8 ADULT
NO PARENTAL
CHANGE
RESET

BASIC NAVIGATION

To navigation through the setting on the screen, use the direction buttons to scroll through the list of settings and use "PLAY" button to select the high lighted function.

SETUP MENU

Press the SETUP button to enter the On Screen Display and to exit at any time. In each of the menus, selecting MAIN PAGE (SETUP menu) will immediately return you to the initial screen.

GENERAL SETUP

TV TYPE

You may select according to the colour system of the TV to be connected.

- Select "PAL" for a PAL TV.
- Select "AUTO" for a multi-system TV.
- Select "NTSC" for a NTSC TV.

TV DISPLAY

1 **NORMAL/PS**
This is selected when the unit is connected with a normal TV.
Wide-screen images are shown on the screen, but with some parts cut automatically.



2 **NORMAL/LB**
This is selected when the unit is connected with a normal TV.
Wide-screen images are shown on screen, with black belts on the top and bottom.



3 **WIDE**
This is selected when the unit is connected with a wide-screen TV.



ANGLE MARK

This only works when there is an angle mark on the disc.

- Select "ON", the screen shows the mark when playing a DVD.
- Select "OFF", the mark is not shown.

Note:

"OSD" means "On Screen Display".

OSD LANGUAGE

When select a language, the screen show this language.

- **ENGLISH/ SPANISH/ ITALIAN/ FRENCH/ DUTCH/ GERMAN/ PORTUGUESE**

  For example, if you select ENGLISH, the OSD is in English.

AUDIO OUTPUT

- **SPDIF OFF**
  No signal is output from the coaxial, optical port.
- **SPDIF/RAW**
  Select this when the DVD player is connected with a power amplifier through optical or coaxial port. Please refer to the page 16. when a Dolby Digital DVD, DTS DVD or MPEG DVD is played, select this, the coaxial or optical port will output in the corresponding digital format (source code). The power amplifier to be connected must have Dolby Digital, DTS and MPEG DVD is played, the optical or coaxial port will output in PCM 2-channel format.
- **SPDIF/PCM**
  Select this when the DVD player is connected with a TV or a power amplifier through audio cord.

CAPTIONS

The hidden subtitle is shown or turn off.

SCREEN SAVER

Start the screen saver, the screen saver image appears when the unit stops or the image is motionless for a few seconds. This saver can keep the screen from being damaged.

DOLBY DIGITAL SETUP

DUAL MONO

This is the output mode of the L and R signals of the set audio output. If it is set to "MIX MONO", the function only works when the DVD being played is 2.0-channel.

- **LT/RT**
  Choose this function when play the disc with DOLBY PRO LOGIC stereo function, this model can decode this disc, let you enjoy the perfect drama at home.

- **STEREO**
  Choose this option, the audio output should be dummy stereo signal.

DYNAMIC

When the compression mode is set to "LINE OUT", this is selected to adjust linear compression rate to obtain the different compression results of the signals.

PREFERENCE SETUP

AUDIO

- **Selecting an audio language.**

Set it as the preferred audio language. In case the audio language is set and recorded in the DISC, it is automatically played in the set language in every playing. For example, English is set and recorded as audio language in the DISC, it is played in English.

SUBTITLE

- **Selecting Subtitle language.**

Please set it as the preferred language. In case the subtitle language is set and recorded in the DISC, it is automatically played in the set language in every playing. For example, English is set and recorded as subtitle language in the DISC, it is played in English.

DISC MENU

- **Selecting Disc Menu language.**

Please set it as the preferred DISC MENU language. In case the DISC MENU language is set and recorded in the DISC, it is automatically played in the set language in every playing. For example, English is set and recorded as a DISC MENU language in the DISC, it is played in English.

PARENTAL

Note:

The password is set by yourself.

The content of a disc with lock function is evaluated by grades. You can select an age grade as your need.

Example: Select “KID SAFE”, the scenes of violence inadvisable to children are not played.

For adults, the screen suggests you enter the code after pushing “PLAY” button , you can watch if the code is right.

PASSWORD

Note:

The password is 3308 when the unit is turned on initially or you forget the password.

Select "PASSWORD" in PREFERENCE SETUP menu to setup password, input a password.

Enter a password according to the screen.



DEFAULT>> RESET

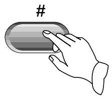
Each function setting returns to the factory initial status if you select this.

OTHERS

TON CONTROL

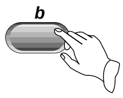
You may change the pitch to adapt to your voice

- Push **#** to raise the pitch.



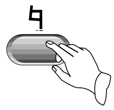
Each time you push the button, the pitch is raised by one step. It can be raised by 7 steps at the most.

- Push ***b*** to lower the pitch.



Each time you push the button, the pitch is lowered by one step. It can be raised by 7 steps at the most.

- Retune to the preliminary atonic-tone.



TROUBLESHOOTING

If you experience the following problems while using the unit, this troubleshooting guide can help you.

- **NO SOUND**

  - Check if the unit is connected securely.
  - Make sure you operate the TV or amplifier correctly.

- **NO IMAGE , IMAGE ROLLS AND NO COLOR**

  - Check if the unit is connected securely.
  - Make sure you operate the TV correctly.
  - Make sure you set the color system correctly.

- **BAD SOUND QUALITY**

  - Make sure the audio output mode is set correctly.
  - Make sure the audio connection between the unit and amplifier is right.

- **DISC CAN NOT BE PLAYED**

  - There is no disc in the unit.
  - Insert the disc on the disc tray properly with the label side up.
  - Clean the disc.
  - Moisture has condensed in the unit.
    Remove the disc and leave the unit on for about one hour.

- **NO PHONE SOUND**

  - Switch on the microphone.
  - Turn the MIC LEVEL away knob clockwise.

- **SCREAMING**

  - Keep the phone far away from the speaker
  - Turn down the volume
  - Turn down the volume of phone and echo.

- **REMOTE CONTROL DOES NOT WORK**

  - Remove barriers between the remote control and the unit.
  - Replace the batteries with new ones.
  - Point the remote control at the remote control sensor of the unit.

- **ATTENTION : KEEPING THE STATUS OF STOP IS MORE THAN AN HOUR, THIS SET ENTERS SCREEN SAVE MODE FOR 5 MINUTES AND THEN THE POWER IS SWITCHED OFF.**

TECHNICAL SPECIFICATIONS

Laser		wavelength 650nm
Video		PAL/AUTO/NTSC
Frequency response		20Hz ~ 20KHz (±1dB)
Signal/noise ratio		≥ 90dB
Channel separation		≥ 85dB (1KHz)
Dynamic range		≥ 80dB (1KHz)
Output Audio	Analog	output level : 2.0 + 0/-0.2Vrms (Load impedance : 10KΩ)
	Digital	output level : 0.5 ± 0.1Vp-p (Load impedance : 75Ω)
Output Video	Composite	output level : 1.0 ± 0.1Vp-p (Load impedance : 75Ω, imbalance, negative polarity)
	S-video	output level : brightness (Luma) 1.0 ± 0.1Vp-p chromaticity (Color) 0.286 ± 20% (Load impedance : 75Ω)
	Component	Y: 1Vp-p, Pb/Pr: 0.7Vp-p (Load impedance : 75Ω)
Power supply		AC100~240V, 50/60Hz
Power consumption		<14W
Dimensions (W x H x D)		430 x 48 x 286 mm
Weight		About 3.8Kgs

Notes : Design and specifications in this owner's manual are subjected to change without prior notice to improve quality and function.

2. REPLACE PARTS

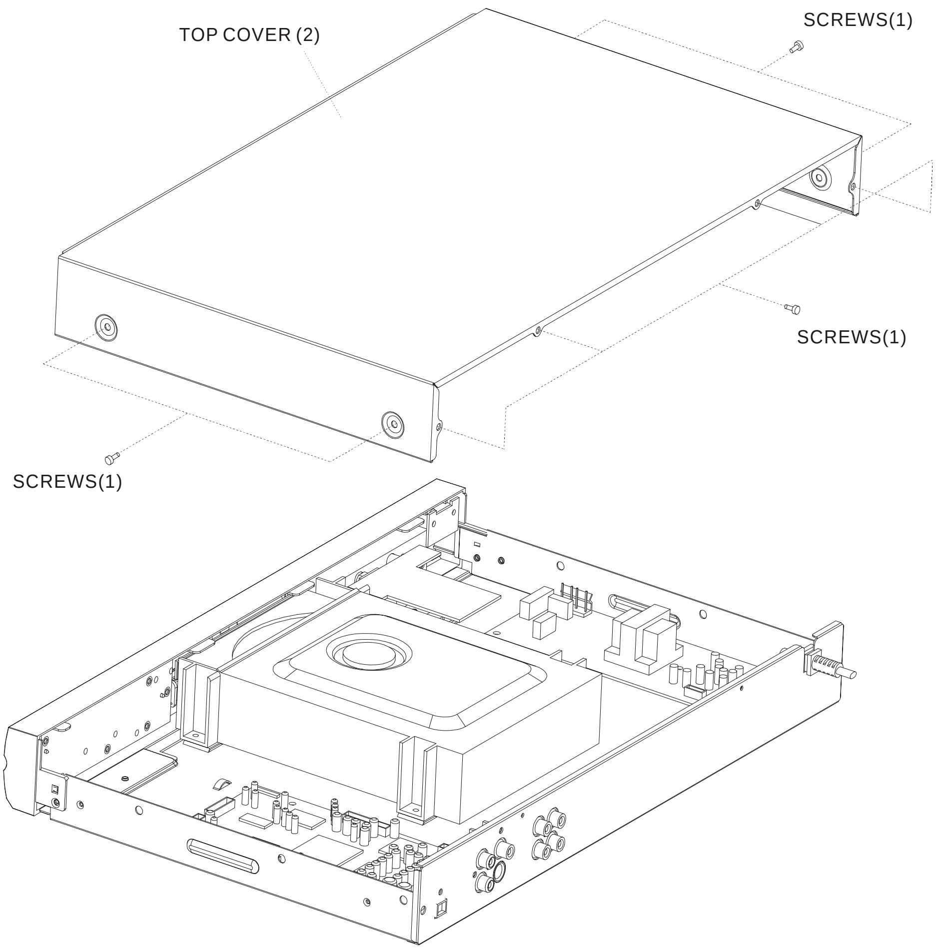
NOTICE:

1. There are some malfunctions because of the influence from static electricity, so you should properly earth.
2. This system includes lots of screws, please operate with magnetic screwdriver in order to prevent dropping screws. You should pay more attention to some special screws, which puts the screw on mold. The screw-socket will be damaged if you operate in wrong way, then the components couldn't be fixed in a good way.

➢ REPLACE CHASSIS

⇨ TOP COVER

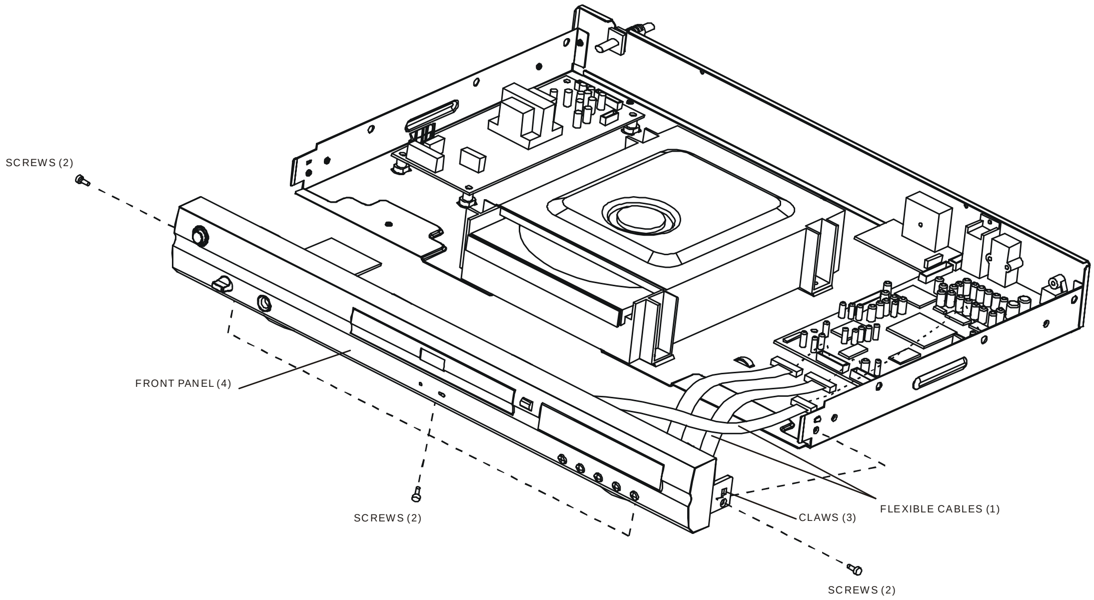
1. Unscrew eight screws (1), dismantle top cover (2).



2-1

⇨ FRONT PANEL

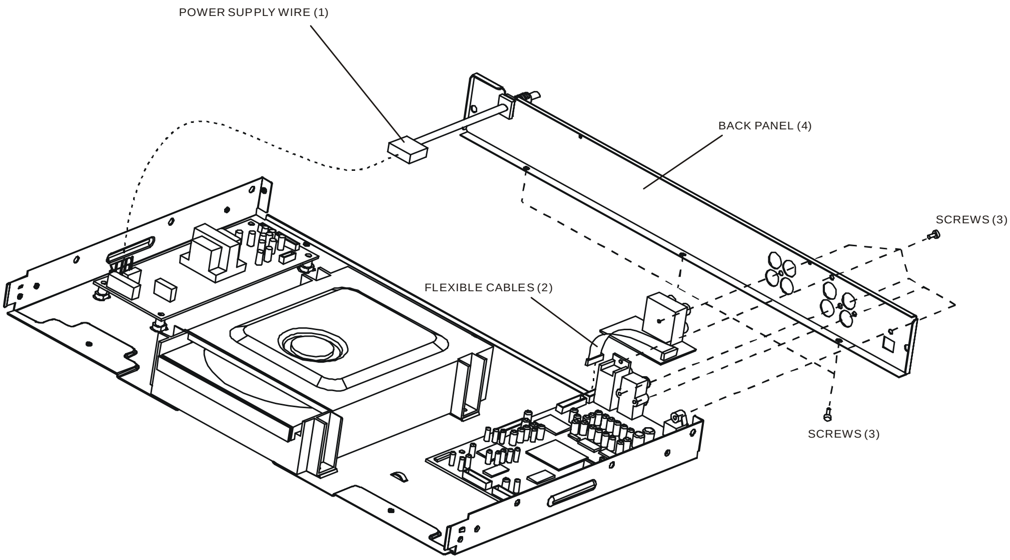
1. Draw out three flexible cables（1）
2. Unscrew five screws（2）
3. Pull out claws（3）
4. Dismantle front panel（4）



2-2

⇨ BACK PANEL

1. Draw out power supply wires（1）
2. Draw out flexible cables (2)
3. Unscrew eight screws（3）
4. Dismantle back panel（4）



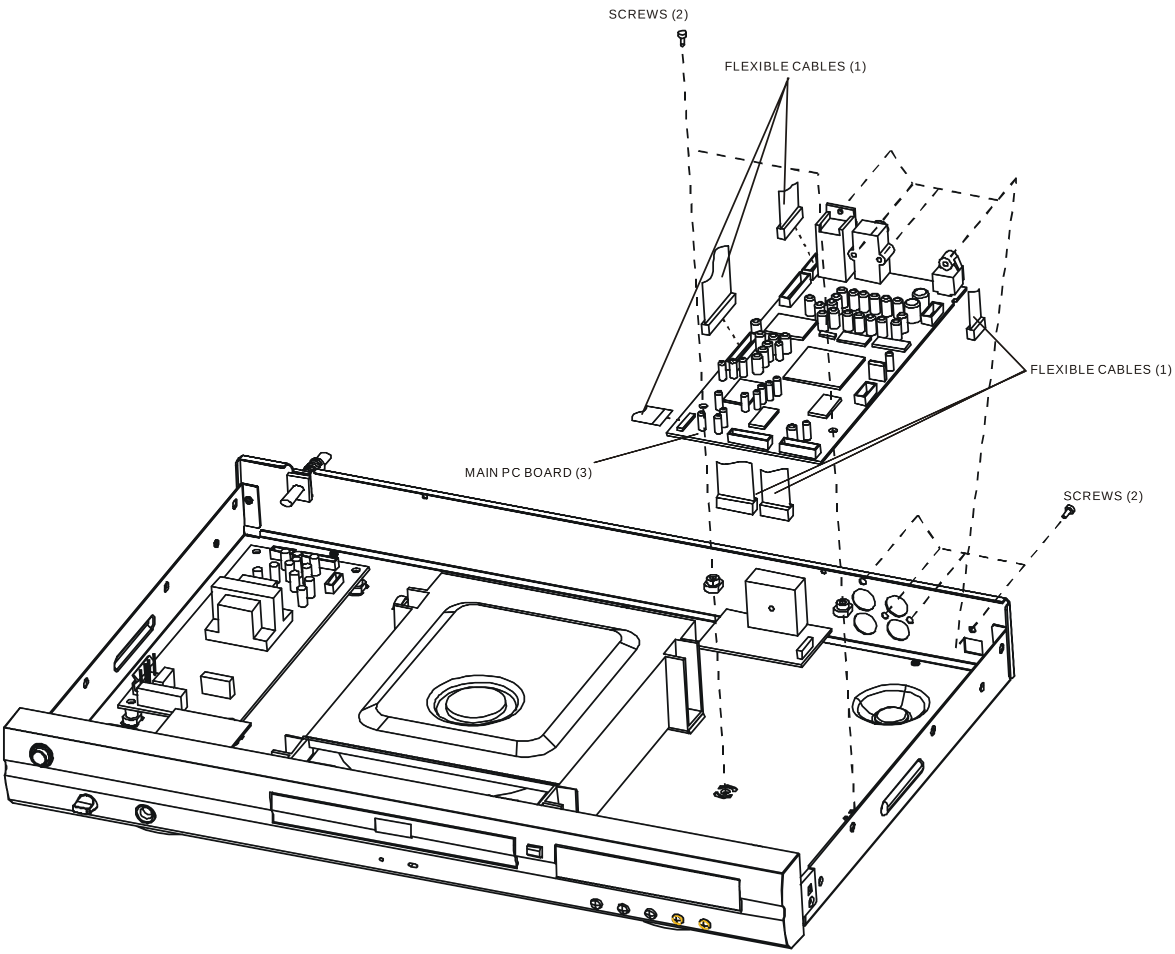
2-3

➢ REPLACE PCB BOARD

⇨ MAIN PC BOARD

NOTICE: to make sure the output protect point of laser diode is short before you dismantle main PC board (3). After you replace main PC board, insert flexible cables and open protect point.

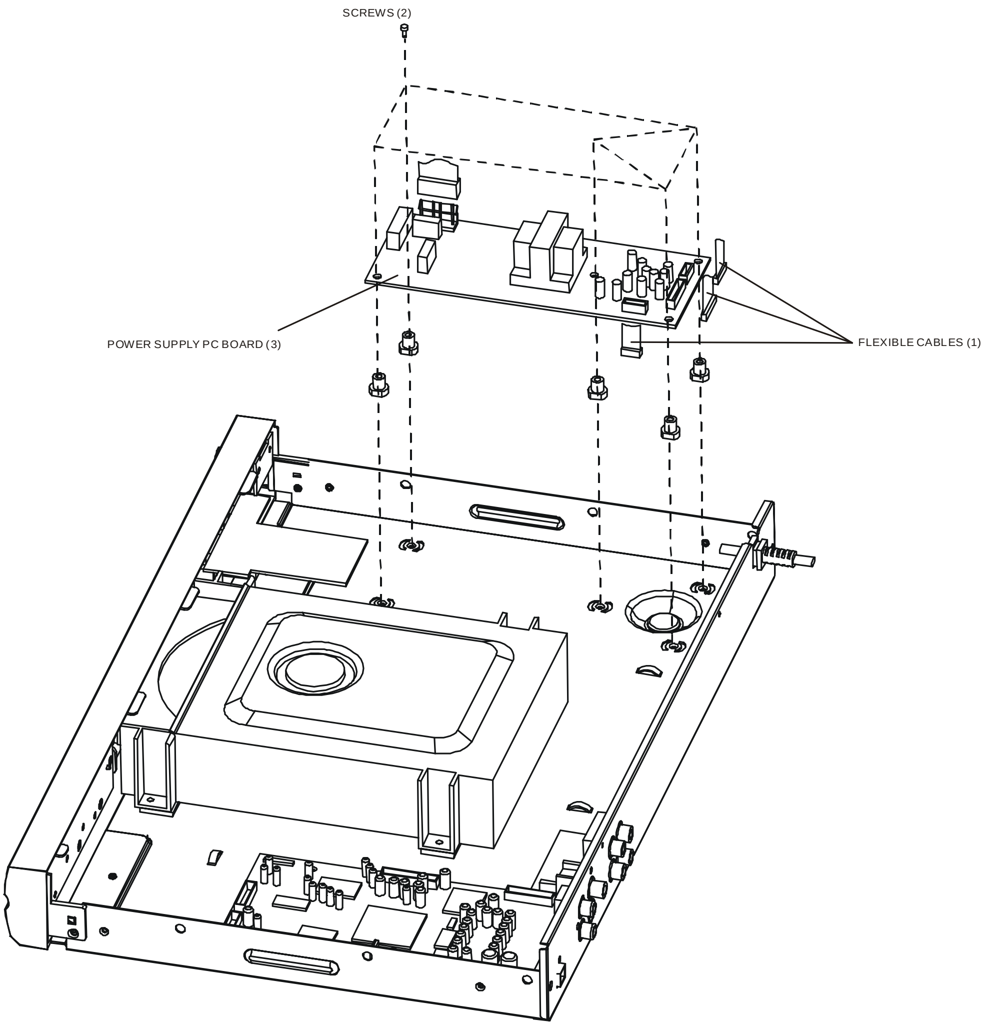
1. Draw out six flexible cables (1).
2. Unscrew six screws (2).
3. Dismantle Main PC board (3).



2-4

⇨ POWER SUPPLY PC BOARD

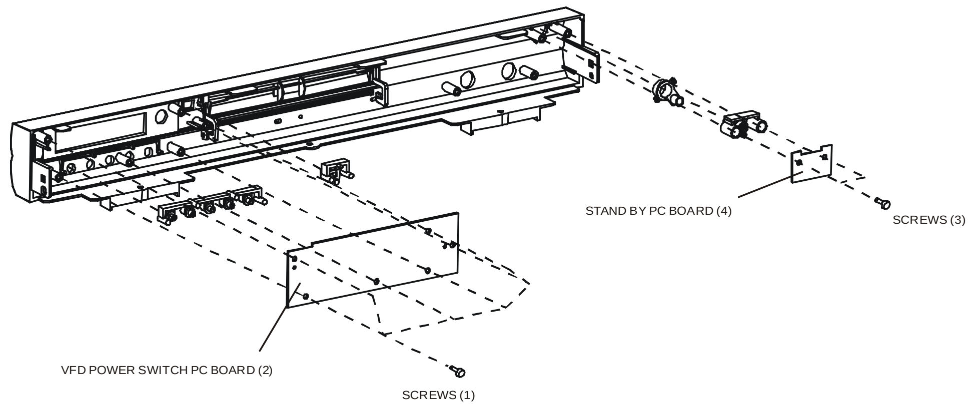
1. Draw out flexible cables（1）
2. Unscrew five screws（2）
3. Dismantle power supply PC board（3）



2-5

⇨ VFD POWER SWITCH PC BOARD

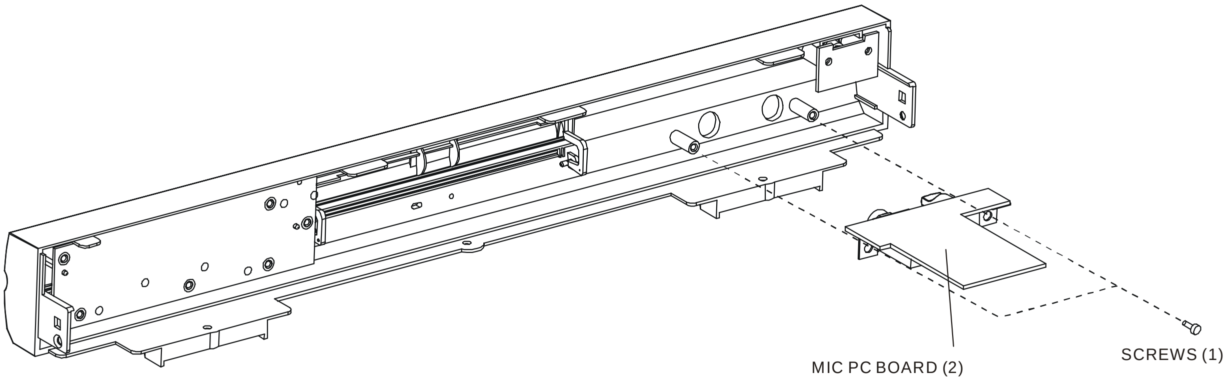
1. Unscrew six screws (1).
2. Dismantle VFD power switch PC board (2).
3. Unscrew two screws (3)
4. Dismantle STAND BY PC board (4).



2-6

⇨ MIC PC BOARD

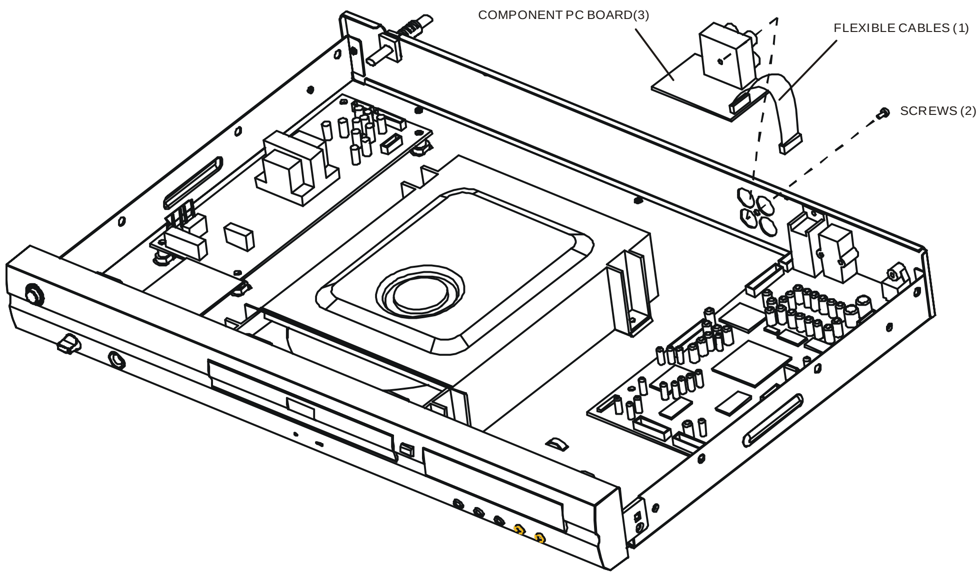
1. Dismantle front panel (reference to **2-2**).
2. Unscrew two screws (1).
3. Dismantle MIC PC board (2).



2-7

⇨ COMPONENT PC BOARD

1. Draw out flexible cables（1）
2. Unscrew one screw (2).
3. Dismantle component PC board (3)

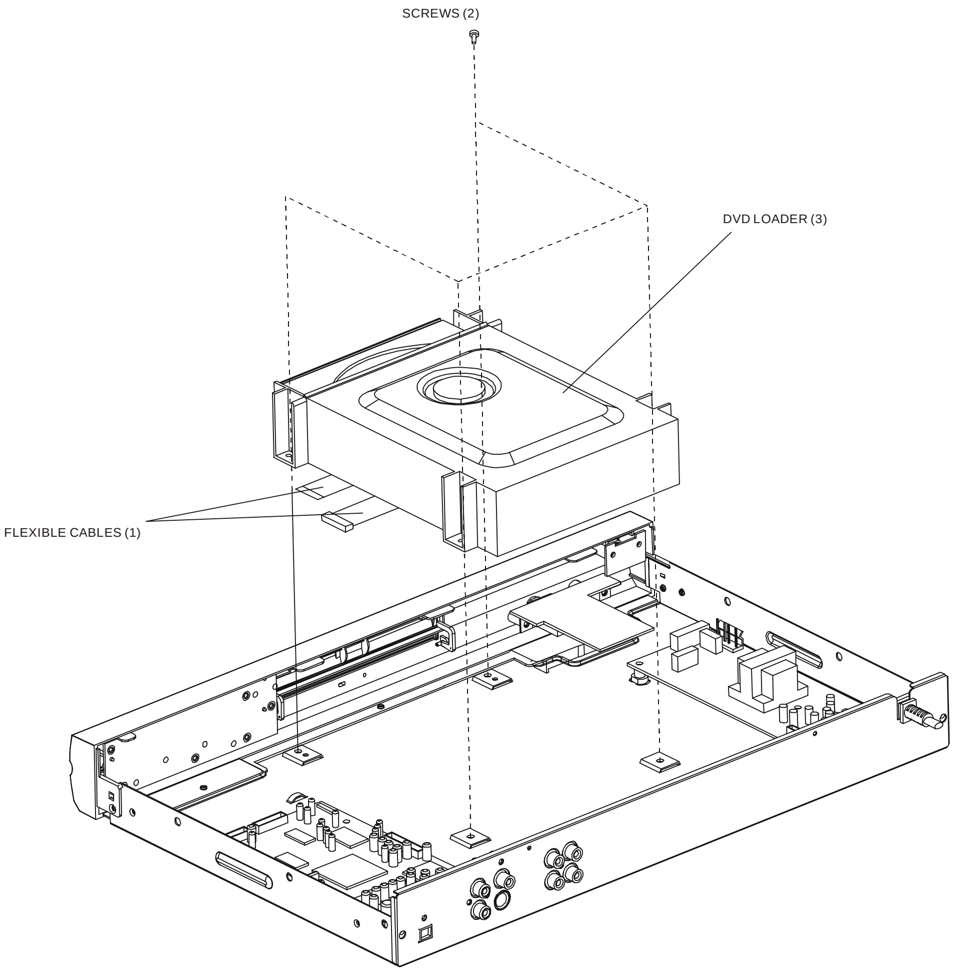


2-8

➢ REPLACE DVD LOADER

NOTICE: To make sure the output protect point of laser diode is short before you draw out joint and soft cable. After you replace mechanical chassis parts and insert joint and soft cable, then open protect point.

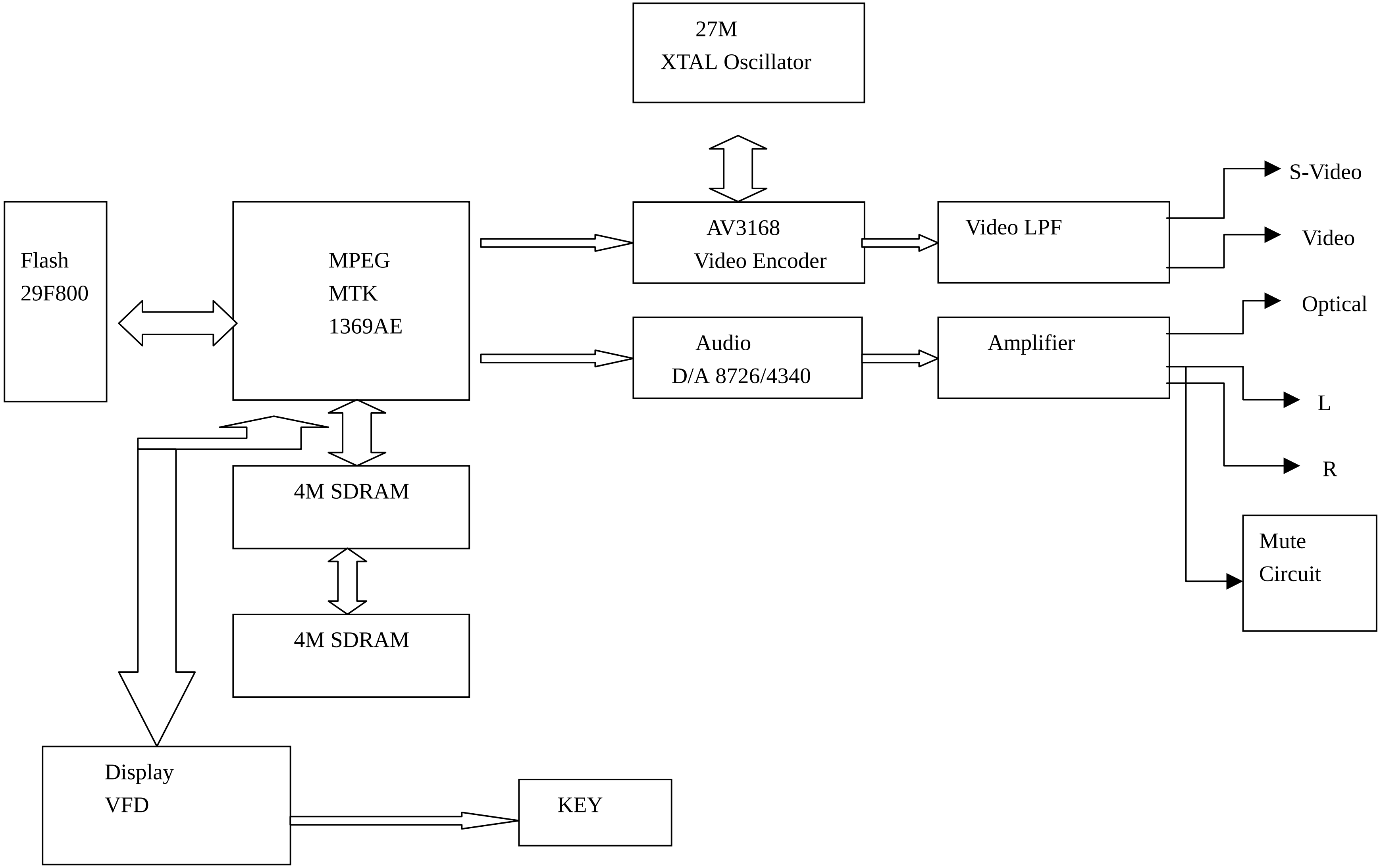
1. Draw out flexible cables (1)
2. Unscrew four screws (2)
3. Dismantle DVD loader (3).



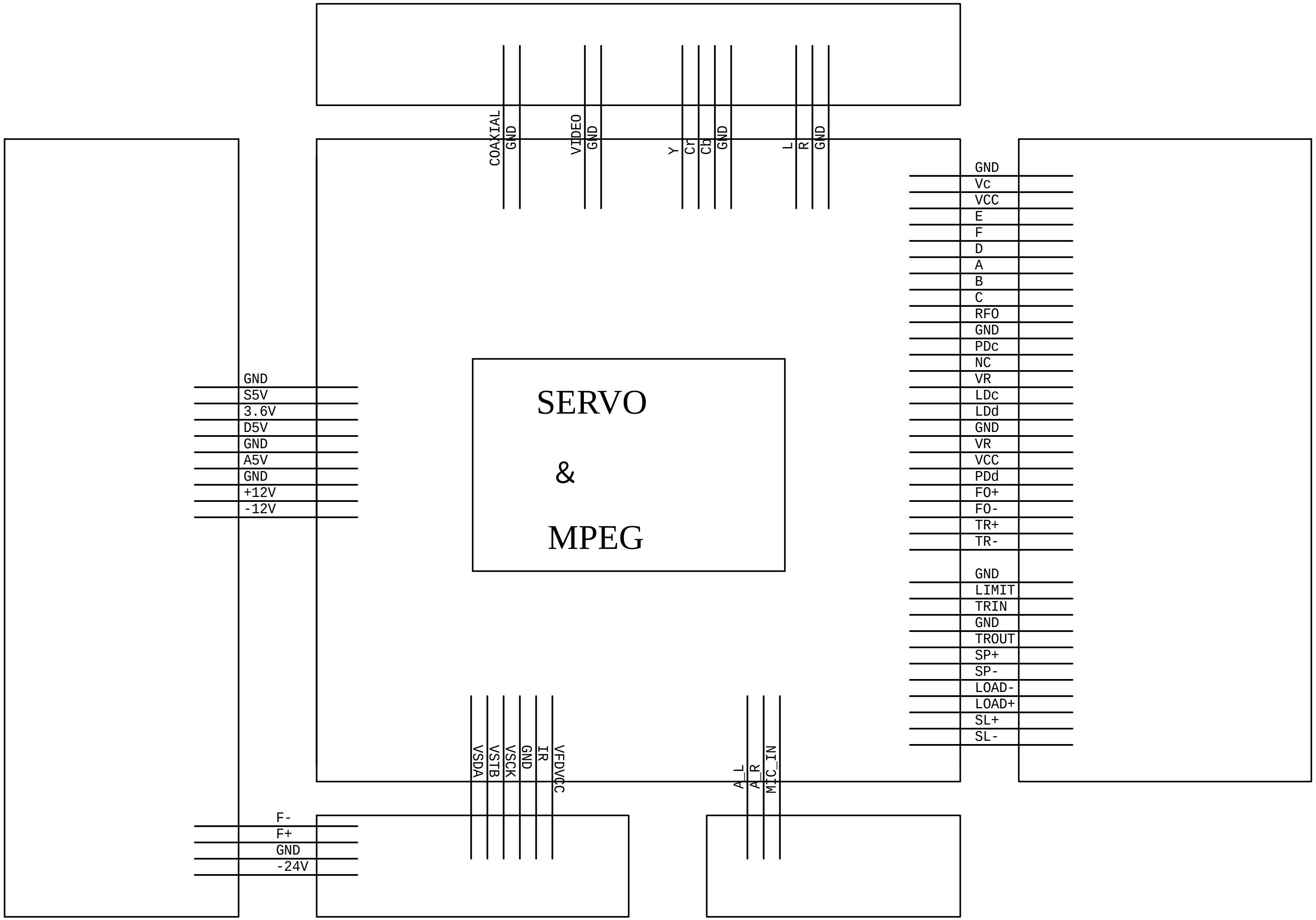
2-9

3. OVERHAUL FLOWCHART

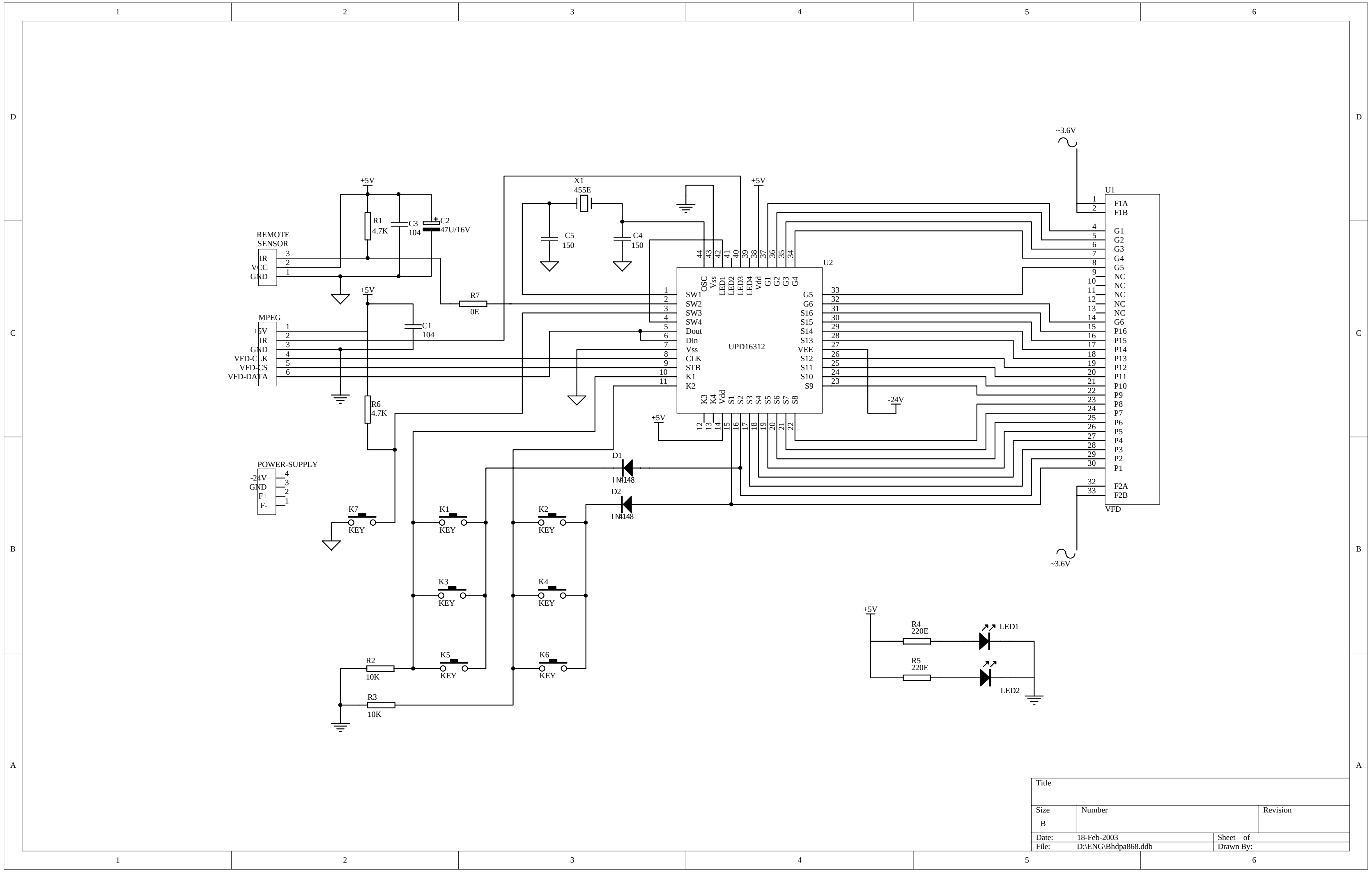
➢ DECODING BLOCK DIAGRAM



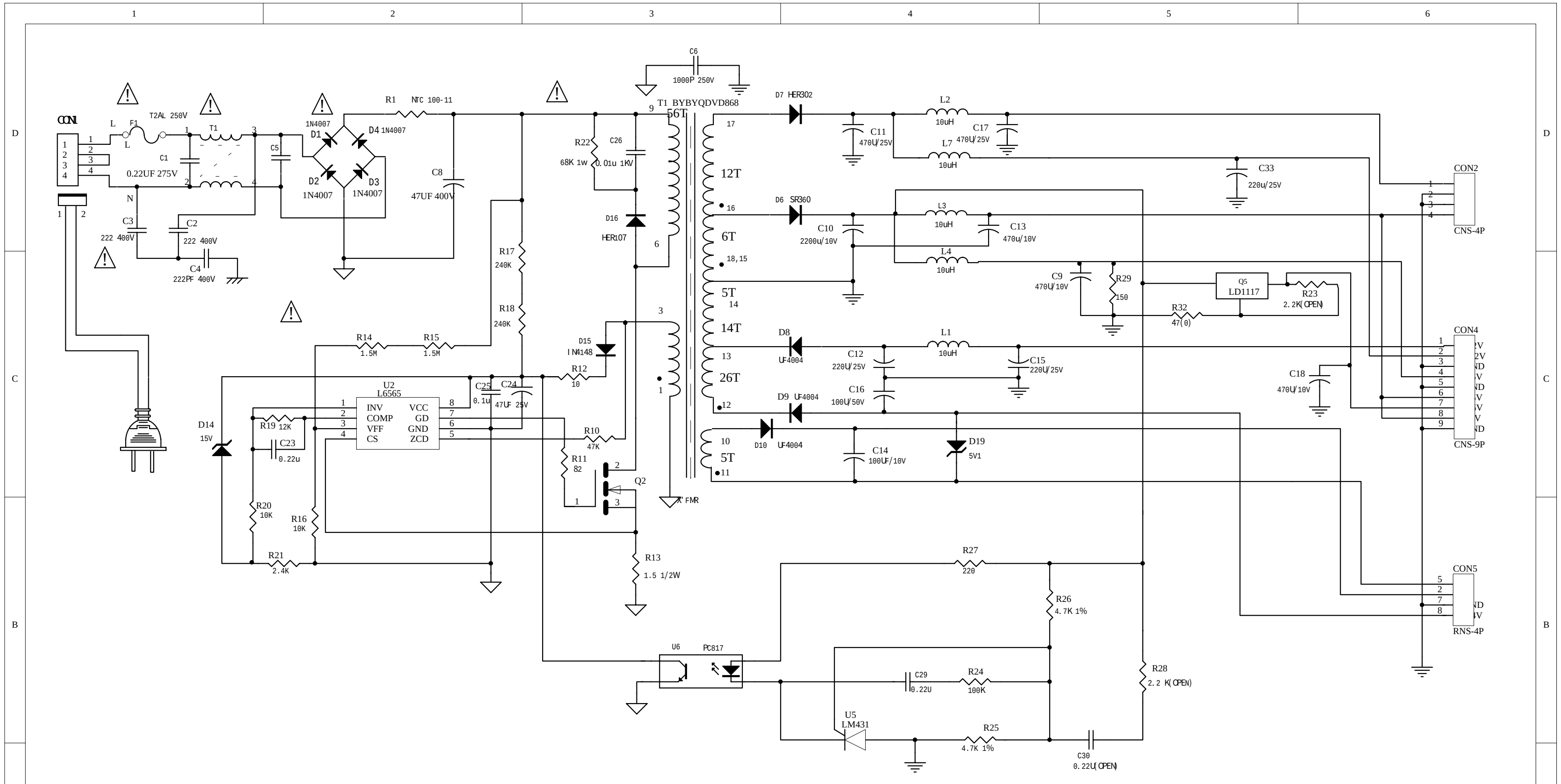
➢ BLOCK DIAGRAM



➢ CONTROL SCHEMATIC CIRCUIT DIAGRAM



➢ POWER SCHEMATIC CIRCUIT DIAGRAM



Input Frequency: 47HZ--63HZ

AC Input: 100---240Vac Pt=30W

Output Requirements :

Output Vol.	Max. Load(mA)
S5V	20---1200
S12V	47---1500
UC12V	3
9V	12
A5V	140
D5V	240
3.4V	400---1000
STB	5
+5V	25
-24V	3
F-	140ac
F+	140ac

COMPANY	GVG	文件名称	GV-3802
文件编号		版本号	
SHEET: 1	SHEET 1 OF 1	DATE	
DESIGN	DRAWN	CHECK BY	APPROVED BY

➢ MT1369AE INDEX & POWER

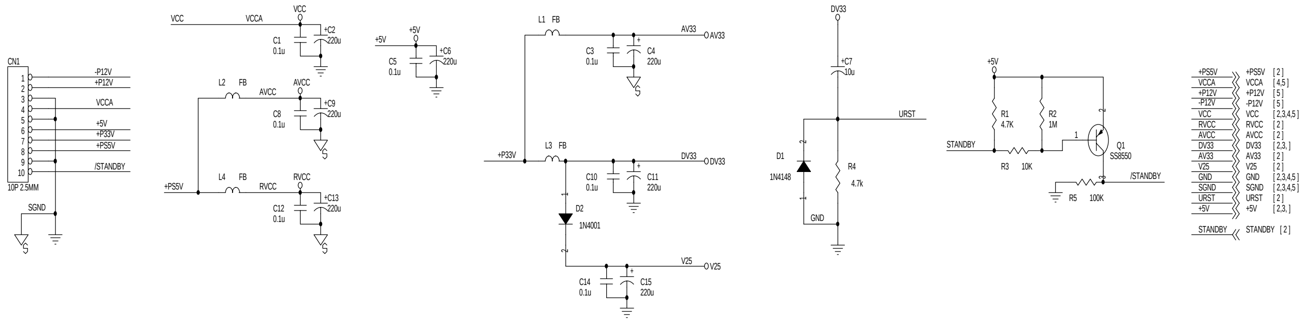
GVG1369M6-2.5

MT1369E (LQFP208) DVD MP Board for Hitachi HOP1120/1200

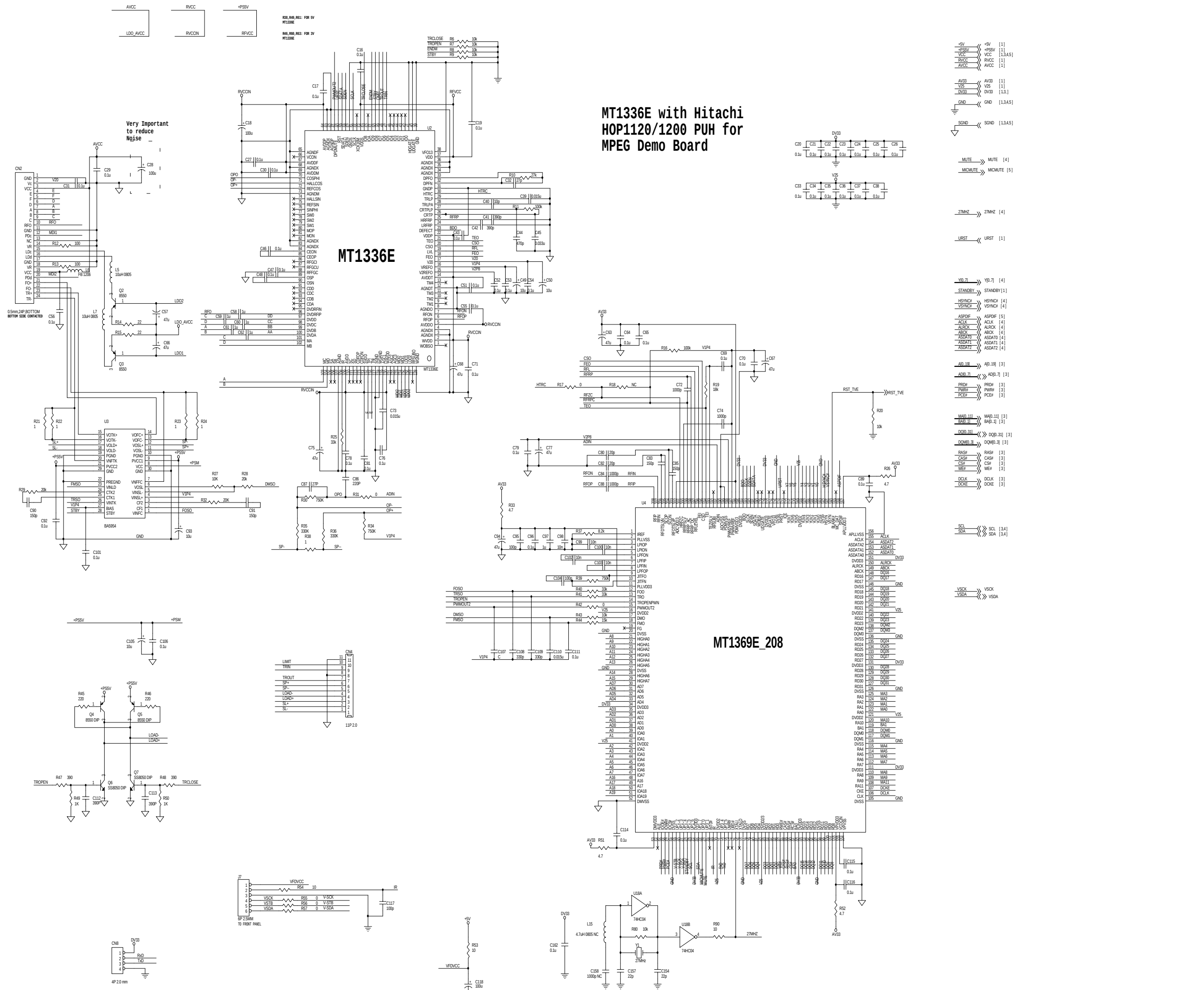
1 INDEX & POWER, RESET
2 RF / SERVO & MPEG - MT1336E / MT1369E
3 MEMORY - SDRAM, FLASH/EEPROM
4 AUDIO -WM8746/8726/4340, VIDEO - AV3168
5 AV FILTER.

NAME	TYPE	DEVICE
VCC	Digital 5V	SUPPLY
RVCC	Servo 5V	MT1336E
AVCC	RF 5V	PICKUP HEADER
V33	Digital 3.3V	SDRAM, Flash, VideoDAC
DV33	Digital 3.3V	MT1369E
AV33	Servo 3.3V	MT1369E
V25	Digital 2.5V	MT1369E
+5VA	Audio 5V	Audio DAC
+3VV	Video 3.3V	Video DAC
+5VV	Video 5V	Video DAC
+12V	Audio 12V	Audio filter

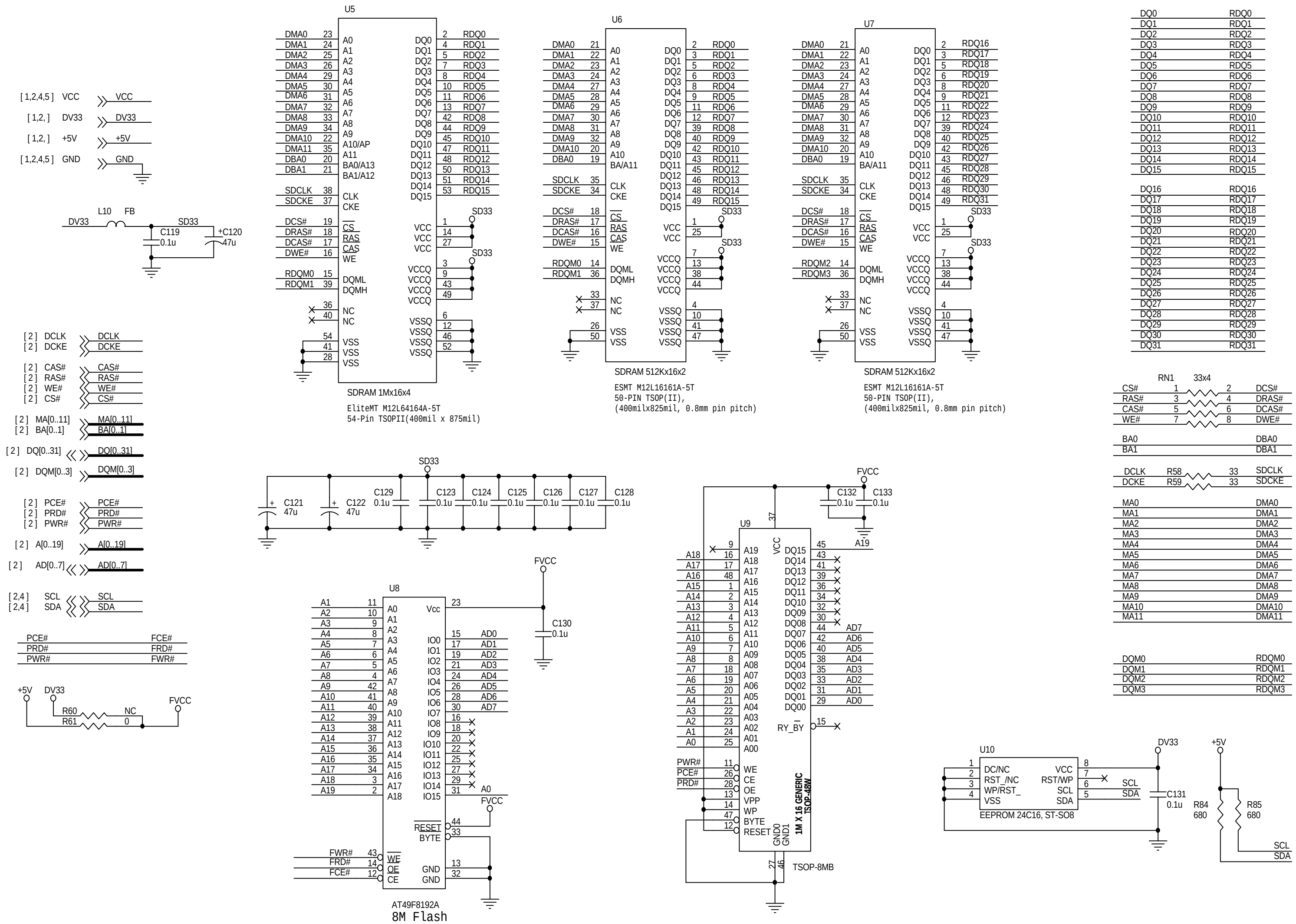
NAME	TYPE
GND	Digital Ground
SGND	Servo Analog Ground
AGND	Audio Ground
VGND	Video Ground



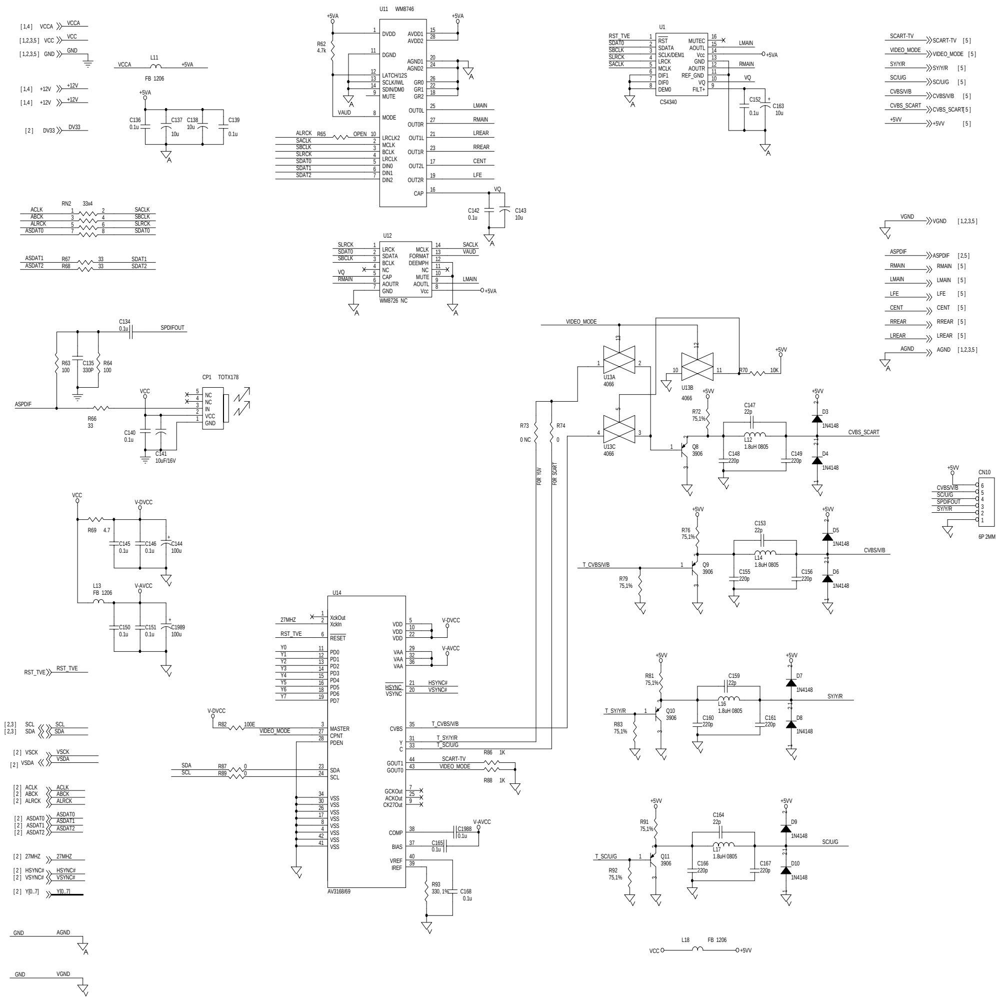
➢ MT1336E SERVO & MT1369AE MPEG DEMO BOARD



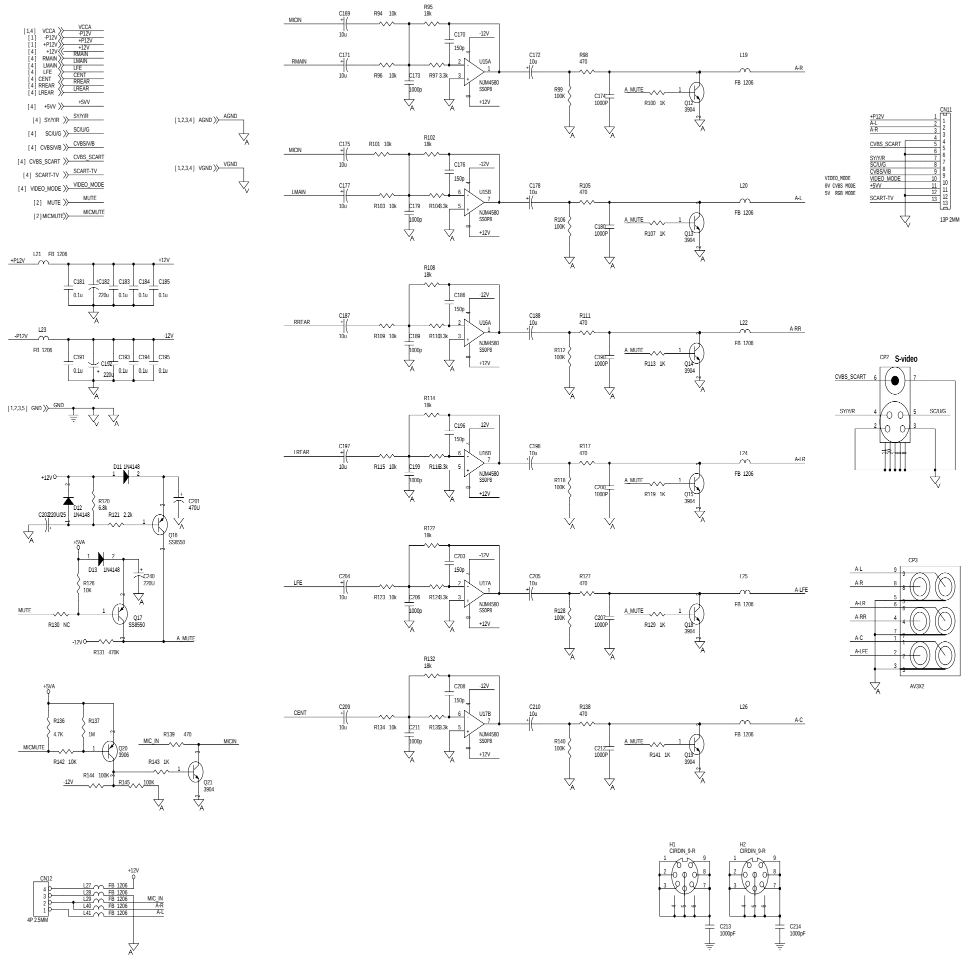
➢ MEMORY SCHEMATIC CIRCUIT DIAGRAM



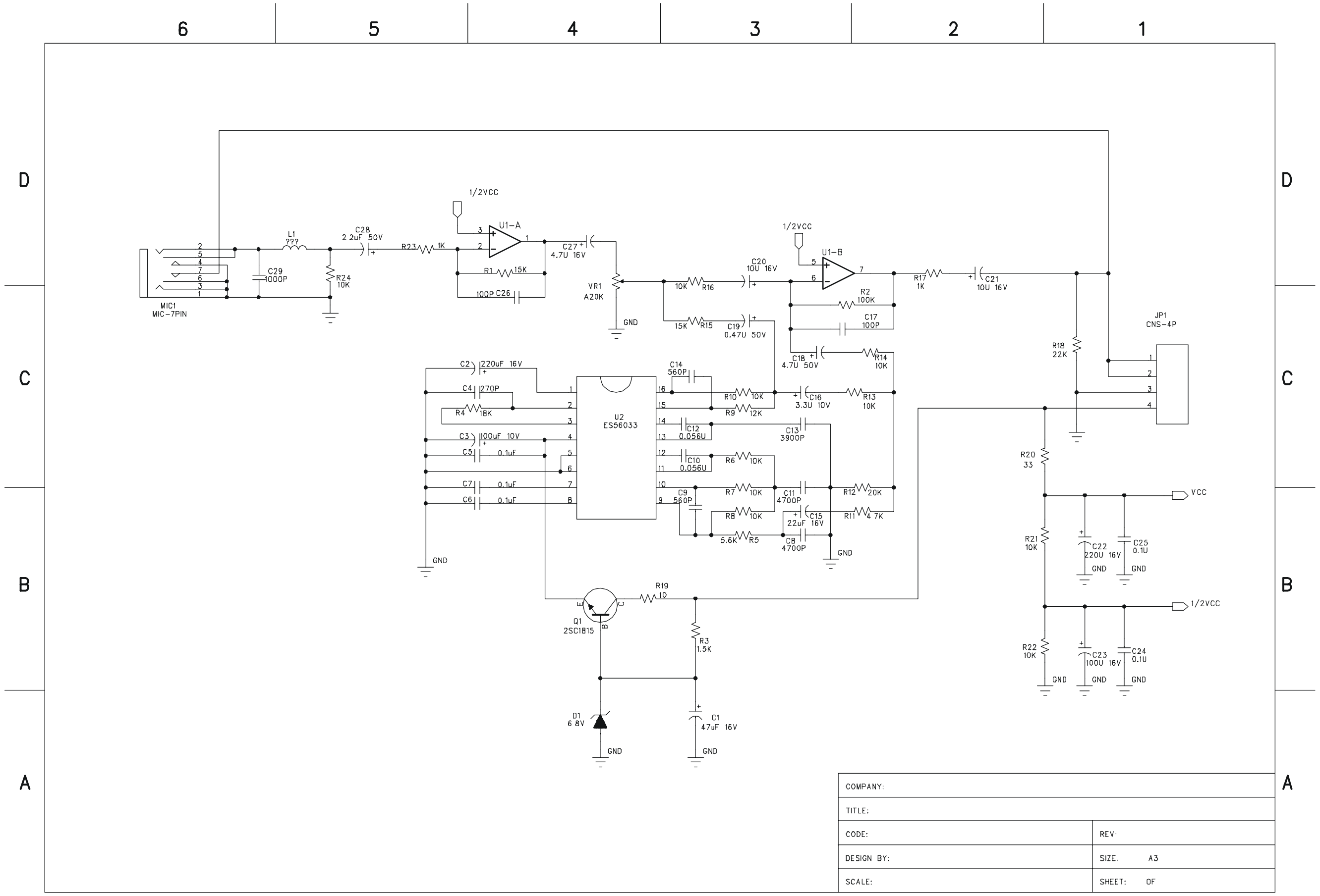
➢ AUDIO & VIDEO DAC CIRCUIT DIAGRAM



➢ AV FILTER SCHEMATIC CIRCUIT DIAGRAM



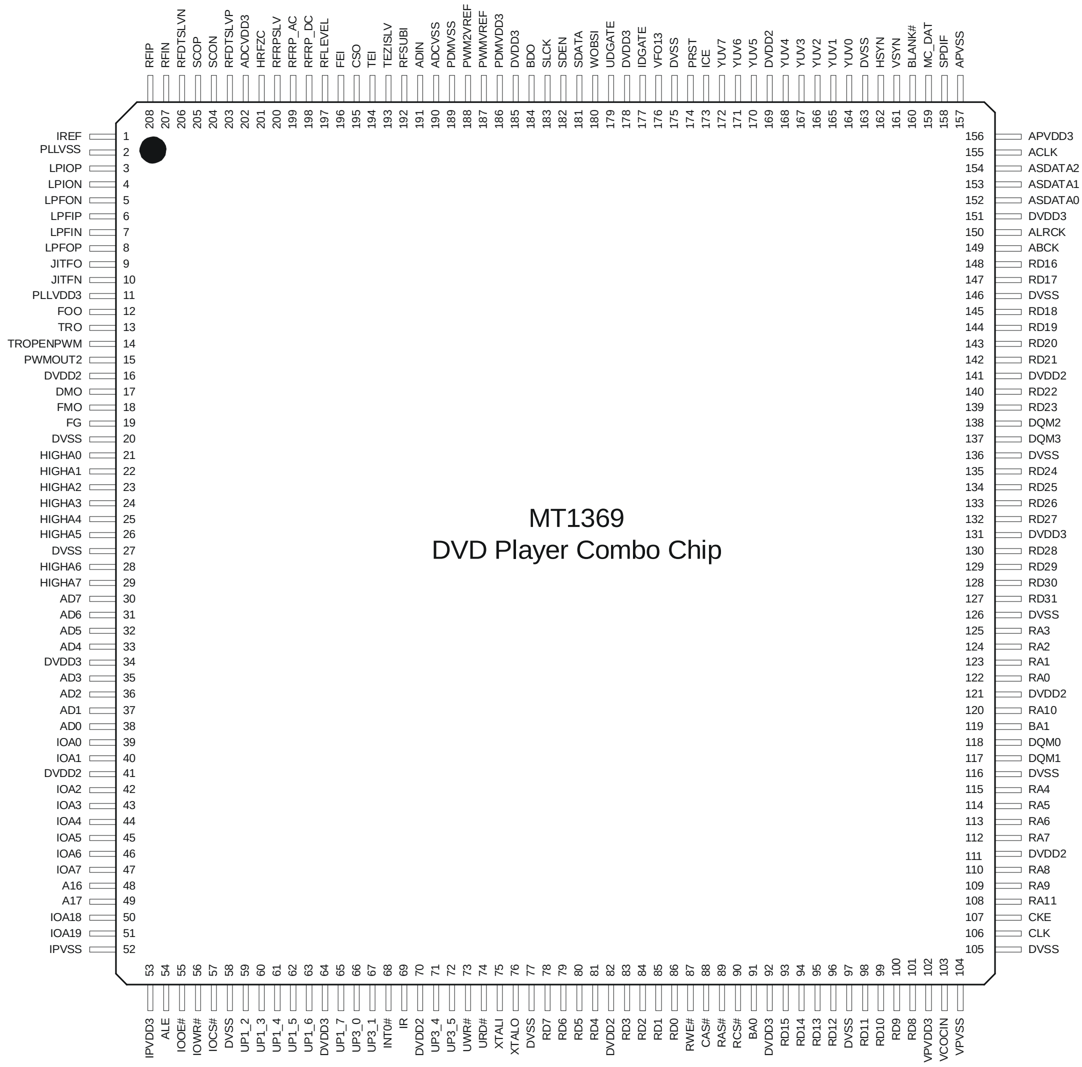
➢ KARAOKE SCHEMATIC CIRCUIT DIAGRAM



4. IC MATERIAL

➢ MT1369E IC MATERIAL

⇨ DECAL



⇨ PIN FUNCTION DESCRIPTION

Pin	Symbol	Type	Description
1	IREF	Analog Input	Current reference input. It generate reference current for data PLL. Connect an external 100K resistor to this pin and PLLVSS.
2	PLLVSS	Ground	Ground for data PLL and related analog circuitry
3	LPIOP	Analog Output	Positive output of the low pass filter
4	LPION	Analog Output	Negative output of the low pass filter
5	LPFON	Analog output	Negative output of loop filter amplifier
6	LPFIP	Analog Input	Positive input of loop filter amplifier
7	LPFIN	Analog Input	Negative input of loop filter amplifier
8	LPFOP	Analog Output	Positive output of loop filter amplifier
9	JITFO	Analog Output	RF jitter meter output
10	JITFN	Analog Input	Negative input of the operation amplifier for RF jigger meter
11	PLLVDD3	Power	Power for data PLL and related analog circuitry
12	FOO	Analog Output	Focus servo output. PDM output of focus servo compensator
13	TRO	Analog Output	Tracking servo output. PDM output of tracking servo compensator
14	TROPENPWM	Analog Output	Tray open output, controlled by microcontroller. This is PWM output for $TRWMEN_{27hRW2}$=1 or is digital output for $TRWMEN_{27hRW2}$=0
15	PWMOUT2	Analog Output	The general PWM output
16	DVDD2	Power	2.5V power
17	DMO	Analog Output	Disk motor control output. PWM output
18	FMO	Analog Output	Feed motor control. PWM output
19	FG	Input, Pull Up	Motor Hall sensor input
20	DVSS	Ground	Ground
21	HIGHA0	Inout, Pull Up	Microcontroller address 8
22	HIGHA1	Inout, Pull Up	Microcontroller address 9
23	HIGHA2	Inout, Pull Up	Microcontroller address 10
24	HIGHA3	Inout, Pull Up	Microcontroller address 11
25	HIGHA4	Inout, Pull Up	Microcontroller address 12
26	HIGHA5	Inout, Pull Up	Microcontroller address 13
27	DVSS	Ground	Ground
28	HIGHA6	Inout, Pull Up	Microcontroller address 14
29	HIGHA7	Inout, Pull Up	Microcontroller address 15
30	AD7	Inout	Microcontroller address/data 7
31	AD6	Inout	Microcontroller address/data 6
32	AD5	Inout	Microcontroller address/data 5
33	AD4	Inout	Microcontroller address/data 4
34	DVDD3	Power	3.3V power
35	AD3	Inout	Microcontroller address/data 3
36	AD2	Inout	Microcontroller address/data 2
37	AD1	Inout	Microcontroller address/data 1
38	AD0	Inout	Microcontroller address/data 0
39	IOA0	Inout, Pull Up	Microcontroller address 0 / GPIO0
40	IOA1	Inout, Pull Up	Microcontroller address 1 / GPIO1
41	DVDD2	Power	2.5V power
42	IOA2	Inout, Pull Up	Microcontroller address 2 / GPIO2
43	IOA3	Inout, Pull Up	Microcontroller address 3 / GPIO3

Pin	Symbol	Type	Description
44	IOA4	Inout, Pull Up	Microcontroller address 4 / GPIO4
45	IOA5	Inout, Pull Up	Microcontroller address 5 / GPIO5
46	IOA6	Inout, Pull Up	Microcontroller address 6 / GPIO6
47	IOA7	Inout, Pull Up	Microcontroller address 7 / GPIO7
48	A16	Output	Flash address 16
49	A17	Output	Flash address 17
50	IOA18	Inout	Flash address 18 / GPIO10
51	IOA19	Inout	Flash address 19 / GPIO11
52	DMVSS	Ground	Ground for DRAM clock circuitry
53	DMVDD3	Power	Power for DRAM clock circuitry
54	ALE	Inout, Pull Up	Microcontroller address latch enable
55	IOOE#	Inout	Flash output enable, active low / GPIO13
56	IOWR#	Inout	Flash write enable, active low / GPIO17
57	IOCS#	Inout, Pull Up	Flash chip select, active low / GPIO18
58	DVSS	Ground	Ground
59	UP1_2	Inout, Pull Up	Microcontroller port 1-2
60	UP1_3	Inout, Pull Up	Microcontroller port 1-3
61	UP1_4	Inout, Pull Up	Microcontroller port 1-4
62	UP1_5	Inout, Pull Up	Microcontroller port 1-5
63	UP1_6	Inout, Pull Up	Microcontroller port 1-6
64	DVDD3	Power	3.3V power
65	UP1_7	Inout, Pull Up	Microcontroller port 1-7
66	UP3_0	Inout, Pull Up	Microcontroller port 3-0
67	UP3_1	Inout, Pull Up	Microcontroller port 3-1
68	INT0#	Inout, Pull Up	Microcontroller interrupt 0, active low
69	IR	Input	IR control signal input
70	DVDD2	Power	2.5V power
71	UP3_4	Inout	Microcontroller port 3-4
72	UP3_5	Inout	Microcontroller port 3-5
73	UWR#	Inout, Pull Up	Microcontroller write strobe, active low
74	URD#	Inout, Pull Up	Microcontroller read strobe, active low
75	XTALI	Input	Crystal input, 27MHz
76	XTALO	Output	Crystal output
77	DVSS	Ground	Ground
78	RD7	Inout	DRAM data 7
79	RD6	Inout	DRAM data 6
80	RD5	Inout	DRAM data 5
81	RD4	Inout	DRAM data 4
82	DVDD2	Power	2.5V power
83	RD3	Inout	DRAM data 3
84	RD2	Inout	DRAM data 2
85	RD1	Inout	DRAM data 1
86	RD0	Inout	DRAM data 0
87	RWE#	Output	DRAM write enable, active low
88	CAS#	Output	DRAM column address strobe, active low
89	RAS#	Output	DRAM row address strobe, active low
90	RCS#	Output	DRAM chip select, active low
91	BA0	Output	DRAM bank address 0

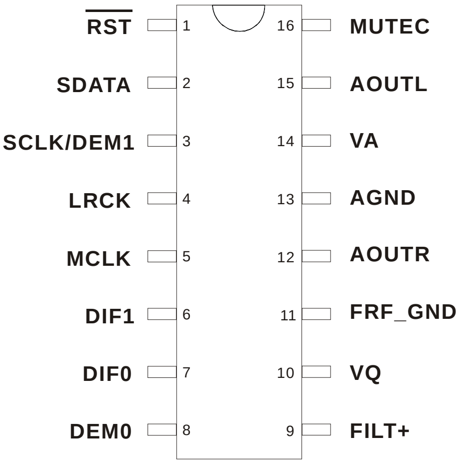
Pin	Symbol	Type	Description
92	DVDD3	Power	3.3V power
93	RD15	Inout, Pull Up/Down	DRAM data 15
94	RD14	Inout, Pull Up/Down	DRAM data 14
95	RD13	Inout, Pull Up/Down	DRAM data 13
96	RD12	Inout, Pull Up/Down	DRAM data 12
97	DVSS	Ground	Ground
98	RD11	Inout, Pull Up/Down	DRAM data 11
99	RD10	Inout, Pull Up/Down	DRAM data 10
100	RD9	Inout, Pull Up/Down	DRAM data 9
101	RD8	Inout, Pull Up/Down	DRAM data 8
102	VPVDD3	Power	Power for varipitch VCO circuitry
103	VCOCIN	Analog Input	Connect capacitor for compensator loop filter
104	VPVSS	Ground	Ground for varipitch VCO circuitry
105	DVSS	Ground	Ground
106	CLK	Output	DRAM clock
107	CLE	Output	DRAM clock enable
108	RA11	Output	DRAM address bit 11 or audio serial data 3 (channel 7/8)
109	RA9	Output	DRAM address 9
110	RA8	Output	DRAM address 8
111	DVDD2	Power	2.5V power
112	RA7	Output	DRAM address 7
113	RA6	Output	DRAM address 6
114	RA5	Output	DRAM address 5
115	RA4	Output	DRAM address 4
116	DVSS	Ground	Ground
117	DQM1	Output	Mask for DRAM input/output byte 1
118	DQM0	Output	Mask for DRAM input/output byte 0
119	BA1	Output	DRAM bank address 0
120	RA10	Output	DRAM address10
121	DVDD2	Power	2.5V power
122	RA0	Output	DRAM address 0
123	RA1	Output	DRAM address 1
124	RA2	Output	DRAM address 2
125	RA3	Output	DRAM address 3
126	DVSS	Ground	Ground
127	RD31	Inout, Pull Up/Down	DRAM data 31
128	RD30	Inout, Pull Up/Down	DRAM data 30
129	RD29	Inout, Pull Up/Down	DRAM data 29
130	RD28	Inout, Pull Up/Down	DRAM data 28
131	DVDD3	Power	3.3V power
132	RD27	Inout, Pull Up/Down	DRAM data 27
133	RD26	Inout, Pull Up/Down	DRAM data 26
134	RD25	Inout, Pull Up/Down	DRAM data 25
135	RD24	Inout, Pull Up/Down	DRAM data 24
136	DVSS	Ground	Ground
137	DQM3	Output	Mask for DRAM input/output byte 3
138	DQM2	Output	Mask for DRAM input/output byte 2
139	RD23	Inout, Pull Up/Down	DRAM data 23

Pin	Symbol	Type	Description
140	RD22	Inout, Pull Up/Down	DRAM data 22
141	DVDD2	Power	2.5V power
142	RD21	Inout, Pull Up/Down	DRAM data 21
143	RD20	Inout, Pull Up/Down	DRAM data 20
144	RD19	Inout, Pull Up/Down	DRAM data 19
145	RD18	Inout, Pull Up/Down	DRAM data 18
146	DVSS	Ground	Ground
147	RD17	Inout, Pull Up/Down	DRAM data 17
148	RD16	Inout, Pull Up/Down	DRAM data 16
149	ABCK	Output	Audio bit clock
150	ALRCK	Inout, Pull Down	(1) Audio left/right channel clock (2) Trap value in power-on reset. 1:use external 373, 0:use internal 373
151	DVDD3	Power	3.3V power
152	ASDATA0	Inout, Pull Down	Audio serial data 0 (left/right channel)
153	ASDATA1	Inout, Pull Down	Audio serial data 1 (surround left/surround right channel)
154	ASDATA2	Inout, Pull Down	Audio serial data 2 (center/LFE channel)
155	ACLK	Inout	Audio DAC master clock (384/256 audio sample frequency)
156	APVDD3	Power	Power for audio clock circuitry
157	APVSS	Ground	Ground for audio clock circuitry
158	SPDIF	Output	SPDIF output
159	MC_DAT	Input	Microphone serial input
160	BLANK#	Inout	Video blank area, active low / GPIO14
161	VSYN	Inout	Vertical sync / GPIO16
162	HSYN	Inout	Horizontal sync / GPIO15
163	DVSS	Ground	Ground
164	YUV0	Output	Video data output bit 0
165	YUV1	Output	Video data output bit 1
166	YUV2	Output	Video data output bit 2
167	YUV3	Output	Video data output bit 3
168	YUV4	Output	Video data output bit 4
169	DVDD2	Power	2.5V power
170	YUV5	Output	Video data output bit 5
171	YUV6	Output	Video data output bit 6
172	YUV7	Output	Video data output bit 7
173	ICE	Input, Pull Down	Microcontroller ICE mode enable
174	PRST	Input, Pull Down	Power on reset input, active high
175	DVSS	Ground	Ground
176	VFO13	Output	The 1st, 3rd VFO pulse output of DVD-RAM ID header
177	IDGATE	Output	DVD-RAM ID header detect signal output
178	DVDD3	Power	3.3V power
179	UDGATE	Output	DVD-RAM recording data gate signal output
180	WOBSI	Input	Wobble signal input
181	SDATA	Output	RF serial data output
182	SDEN	Output	RF serial data latch enable
183	SLCK	Output	RF serial clock output
184	BDO	Input, Pull Down	Flag of defect data status input
185	DVDD3	Power	3.3V power

Pin	Symbol	Type	Description
186	PDMVDD3	Power	Power for PDM circuitry
187	PWMVREF	Analog Input	A reference voltage input for PWM circuitry. A typical value of 2.8 v
188	PWM2VREF	Analog Input	A reference voltage input for PWM circuitry. A typical value of 1.4 v
189	PDMVSS	Ground	Ground for PDM circuitry
190	ADCVSS	Ground	Ground for ADC circuitry
191	ADIN	Analog Input	General A/D input
192	RFSUBI	Analog Input	RF subtraction signal input terminal
193	TEZISLV	Analog Input	Tracking error zero crossing low pass input
194	TEI	Analog Input	Tracking error input
195	CSO	Analog Input	Central servo input
196	FEI	Analog Input	Focus error input
197	RFLEVEL	Analog Input	Sub beam add input or RFRP low pass input
198	RFRP_DC	Analog Input	RF ripple detect input
199	RFRP_AC	Analog Input	RF ripple detect input (through AC coupling)
200	RFRPSLV	Analog Input	RFRP slice level input
201	HRFZC	Analog Input	High frequency RF ripple zero crossing
202	ADCVDD3	Power	Power for ADC circuitry
203	RFDTSLVP	Analog Output	Positive RF data slicer level output
204	SCON	Analog Output	Negative analog slicer current output
205	SCOP	Analog Output	Positive analog slicer current output
206	RFDTSLVN	Analog Output	Negative RF data slicer level output
207	RFIN	Analog Input	Negative input of RF differential signal
208	RFIP	Analog Input	Positive input of RF differential signal

➢ CS4340(AUDIO D/A) IC MATERIAL

⇨ DECAL

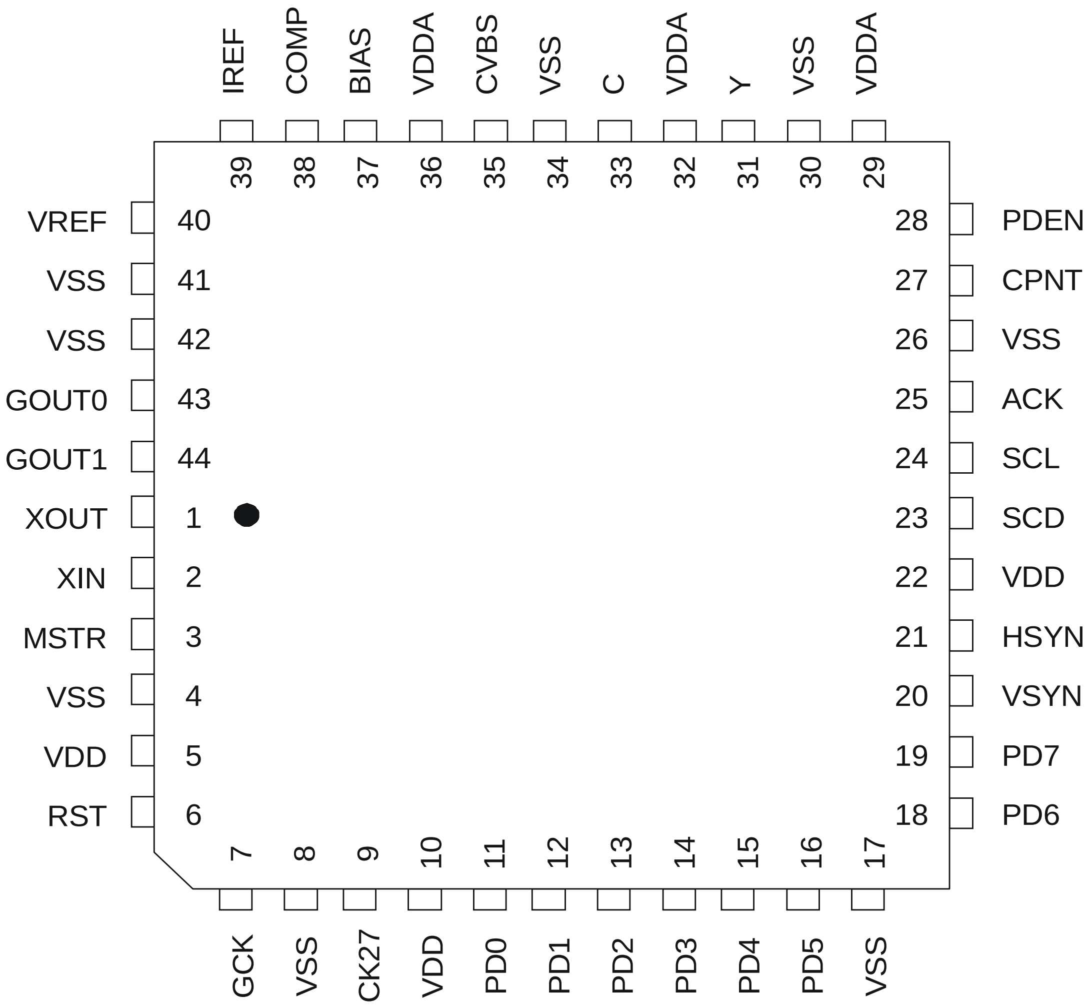


⇨ PIN FUNCTION DESCRIPTION

Pin Name	#	Pin Description
$\overline{\text{RST}}$	**1**	**Reset**(*Input*)-Powers down device.
SDATA	**2**	**Serial Audio Data**(*Input*)- Input for two's complement serial audio data.
SCLK	**3**	**Serial Clock**(*Input*)-Serial clock for the serial audio interface.
DEM1 **DEM0**	**3** **8**	**De-emphasis Control**(*Input*)-Selects the standard 15us/50us digital de-emphasis filter response for 44.1kHz sample rate.
LRCK	**4**	**Left Right Clock**(*Input*)- Determines which channel,Left or Right, is currently active on the serial audio data line.
MCLK	**5**	**Master Clock**(*Input*)-Clock source for the delta-sigma modulator and digital filters.
DIF1 **DIF0**	**6** **7**	**Digital Interface Format**(*Input*)-Defines the required relationship between the Left Right Clock, Serial Clock and Serial Audio Data.
FLT+	**9**	**Positive Voltage Reference**(*Output*)-Positive voltage reference for the internal sampling circuits.
VQ	**10**	**Quiescent Voltage**(*Output*)-Filter connection for internal quiescent reference volgate.
REF_GND	**11**	**Reference Ground**(*Input*)-Ground reference for the internal sampling circuits.
AOUTR **AOUTL**	**12** **15**	**Analog Outputs**(*Output*)-The full scale analog output level is specified in the Analog Characteristics table.
AGND	**13**	**Analog Ground**(*Input*)
VA	**14**	**Power**(*Input*)-Positive power for the analog, digital and serial audio interface sections.
MUTEC	**16**	**Mute Control**(*Output*)-Control signal for an optional mute circuit.

➢ AV 3168（VIDEO）IC MATERIAL

⇨ DECAL



⇨ PIN FUNCTION DESCRIPTION

Pin Name	Pin #	Type	Description
PD<7 -0>	11-16 18-19	I	Multiplexed Cb, Y, and Cr digital video input bus.
$\overline{\text{HSYN}}$	20	I/O	In Slave Mode (MSTR pin is low) Horizontal Synch input. In Master Mode (MSTR pin is high) Horizontal Synch output.
$\overline{\text{VSYN}}$	21	I/O	In slave mode (MSTR pin is low) Vertical Sync input. In master mode Vertical Sync output.
MSTR	3	I	Master Mode; If this pin is high, the chip outputs horizontal and vertical sync signals. Otherwise it receives both horizontal and vertical sync signals.
CPNT	27	I	Select either component or composite video output. 0: Simultaneous Composite and S-Video output. 1: Component video output either RGB or YCbCr determined by the register CR0[5:4].
PDEN	28	1	Pedestal enable pins. When this pin is high 7.5 IRE is added for the NTSC composite analog output.
CVBS	35	O	Analog video output Determined by the state of CPNT pin and CR0[5:4] CPNT CR0[5] CR0 [4] 0 X X: Composite video output 1 X 0: Cr output in CbCr component mode 1 0 X: : 1 1 1: Blue color output in RGB mode
Y	31	O	Analog video output Determined by the state of CPNT pin and CR0[5:4] CPNT CR0[5] CR0 [4] 0 X X: S-Video Y output. 1 X 0: Cb output in CbCr component mode 1 0 X: : 1 1 1: R color output in RGB mode
C	33	O	Analog video output Determined by the state of CPNT pin and CR0[5:4] CPNT CR0[5] CR0 [4] 0 X X: S-Video C output. 1 1 0: Cb output in CbCr component mode 1 0 X: : 1 1 X: Green color output in RGB mode
VREF	40	I/O	Voltage reference. It has an internal voltage reference circuit, but may be overridden by an external voltage reference input. A 0.1 uF ceramic capacitor is required between this pin and GND.
IREF	39	I	A resistor should be connected between this pin and GND to control the DAC output current. The recommended value is 198 (382) ohm 1% metal film resistor for double (single) end 75 ohm termination.
COMP	38	I	Compensation capacitor for the DAC internal reference amplifier. A 0.1 uF ceramic capacitor is required between this pin and VDDA.
BIAS	37	I/O	DAC bias voltage. A 0.1 uf ceramic capacitor must be used to de-couple this pin to VDDA.

SCL	24	I	Serial bus clock
SDA	23	I/0	Serial bus address and data input and output pin. Open drain output.
GCK	7	O	General Purpose Clock. Clock frequency is determined by the state of GOUT[1:0] when $\overline{RST}$ pin is low. 00 : 40.5 MHz clock output. 0 1: 54.0 MHz clock output. 1 0: 67.5 Mhz clock output. 1 1: 81.0 MHz
CK27	9	O	27 MHz clock output pin.
ACK	25	I/O	384*fs Audio clock output pin. Controlled by CR2[1:0] 0 0: 384 * 44.1 KHz (16.934MHz) clock output. 0 1: 384 * 48.0 KHz (18.432MHz) clock output. 1 0: 384 * 88.2 KHz (33.868MHz) clock output. 1 1. 384 * 96.0 KHz (36.864MHz) clock output.
XIN	2	I	27 Mhz oscillator input
XOUT	1	O	27 Mhz oscillator output
$\overline{RST}$	6	I	Active low chip reset input. Chip is in the power down mode when the $\overline{RST}$ is low.
GOUT1	44	O	Dual function pin. GCK frequency select pin when $\overline{RST}$ is low. General purpose output pin when $\overline{RST}$ is high
GOUT0	43	I	Dual function pin. GCK frequency select pin when $\overline{RST}$ is low. General purpose output pin when $\overline{RST}$ is high
VDD	10, 22, 5	+5V	Digital power supply.
VSS	8, 17, 26, 30, 34, 41, 42, 4	GND	Digital ground
VDDA	29, 32, 36.	+5V	Analog video power supply.

➢ FLASH 29F800 IC MATERIAL

⇨ DECAL

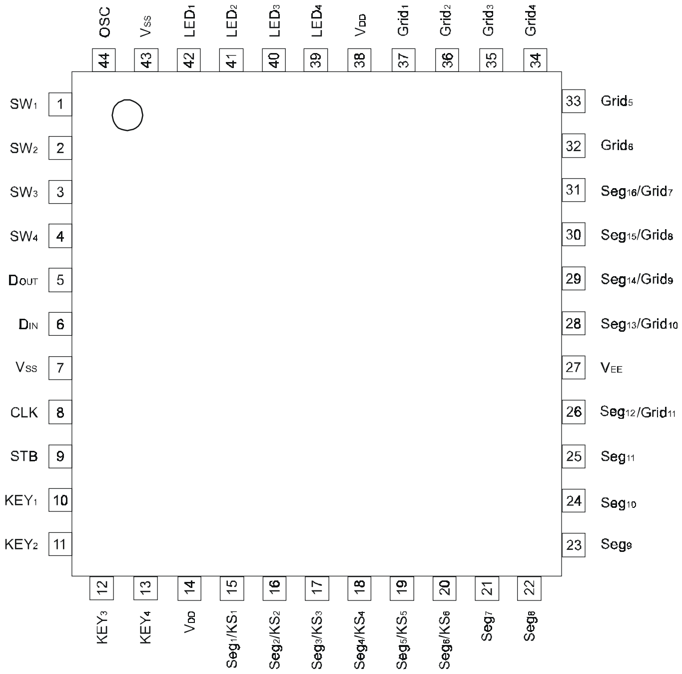


⇨ PIN FUNCTION DESCRIPTION

SYMBOL	PIN NAME
A0~A18	Address Input
Q0~Q14	Data Input/Output
Q15/A-1	Q15(Word mode)/LSB addr(Byte mode)
$\overline{CE}$	Chip Enable Input
$\overline{WE}$	Write Enable Input
$\overline{BYTE}$	Word/Byte Selction input
$\overline{RESET}$	Hardware Reset Pin/Sector Protect Unlock
$\overline{OE}$	Output Enable Input
RY/$\overline{BY}$	Ready/Busy Output
VCC	Power Supply Pin (+5V)
GND	Ground Pin

➢ CONTROL PANEL IC MATERIAL

⇨ DECAL

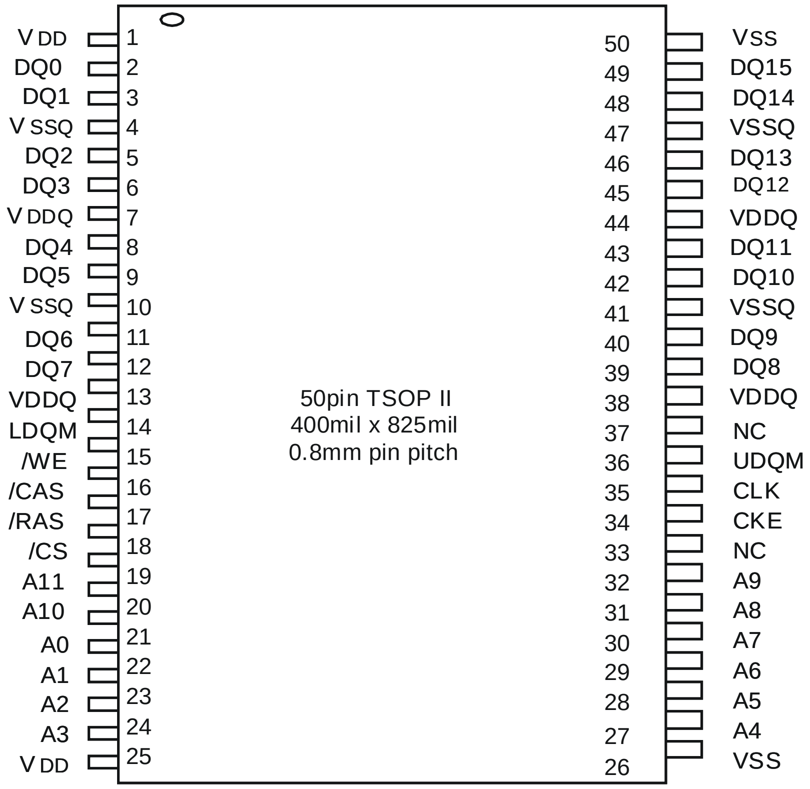


⇨ PIN FUNCTION DESCRIPTION

Pin No.	Symbol	Pin Name	Description
6	D_{IN}	Data input	Inputs serial data at rising edge of shift clock, starting from lower bit.
5	D_{OUT}	Data output	Outputs serial data at falling edge of shift clock, starting from lower bit. This is N-ch open-drain output pin.
9	STB	Strobe	Initializes serial interface at rising or falling edge to make μPd16312 waiting for reception of command. Data input after STB has fallen is processed as command. While command data is processed, current processing is stopped, and serial interface is initialized. While STB is high, CLK is ignored.
8	CLK	Clock input	Reads serial data at rising edge, and outputs data at falling edge.
44	OSC	Oscillator pin	Connect resistor for determining oscillation frequency to this pin.
15 to 20	Seg_1/KS_1 to Seg_6 /KS_6	High-voltage output	Segment output pins (Dual function as key source)
37 To 32	$Grid_1$ to $Grid_6$	High-voltage output (grid)	Grid output pins
26,28 to 31	$Seg_{12}/Grid_{11}$ to $Seg_{16}/Grid_7$	High-voltage output (segment/grid)	These pins are selectable for segment or grid output.
42 to 39	LED_1 to LED_5	LED output	CMOS output. +20 mA max.
10 to 13	Key_1 to Key_4	Key data input	Data input to these pins is latched at end of display cycle.
1 to 4	SW_1 to SW_4	Switch input	These pins constitute 4-bit general-purpose input port.
14, 38	V_{DD}	Logic power	5 V ± 10 %
7, 43	V_{SS}	Logic ground	Connect this pin to GND of system.
27	V_{EE}	Pull-down level	V_{DD} − 35 V max.
21 to 25	Seg7 to Seg11	High-voltage output	Segment output pins.

➢ 16M SDRAM IC MATERIAL

⇨ DECAL



4-10

⇨ PIN FUNCTION DESCRIPTION

PIN	PIN NAME	DESCRIPTION
CLK	Clock	The system clock input. All other inputs are referenced to the SDRAM on the rising edge of CLK.
CKE	Clock Enable	Controls internal clock signal and when deactivated, the SDRAM will be one of the states among power down, suspend or self refresh.
$\overline{CS}$	Chip Select	Command input enable or mask except CLK, CKE and DQM
BA	Bank Address	Select either one of banks during both $\overline{RAS}$ and $\overline{CAS}$ activity.
A0 ~ A10	Address	Row Address : RA0 ~ RA10, Column Address : CA0 ~ CA7 Auto-precharge flag : A10
$\overline{RAS}$, $\overline{CAS}$, $\overline{WE}$	Row Address Strobe, Column Address Strobe, Write Enable	$\overline{RAS}$, $\overline{CAS}$ and $\overline{WE}$ define the operation. Refer function truth table for details
LDQM, UDQM	Data Input/Output Mask	DQM control output buffer in read mode and mask input data in write mode
DQ0 ~ DQ15	Data Input/Output	Multiplexed data input / output pin
VDD/VSS	Power Supply/Ground	Power supply for internal circuit and input buffer
VDDQ/VSSQ	Data Output Power/Ground	Power supply for DQ
NC	No Connection	No connection

Note:

We have rights to improve our design plan before we inform our customers.